THE BEST IN SCIENCE FICTION

WONDER Stories

May

A GERNSBACK PUBLICATION

NRA

HUGO GERNSBACK Editor

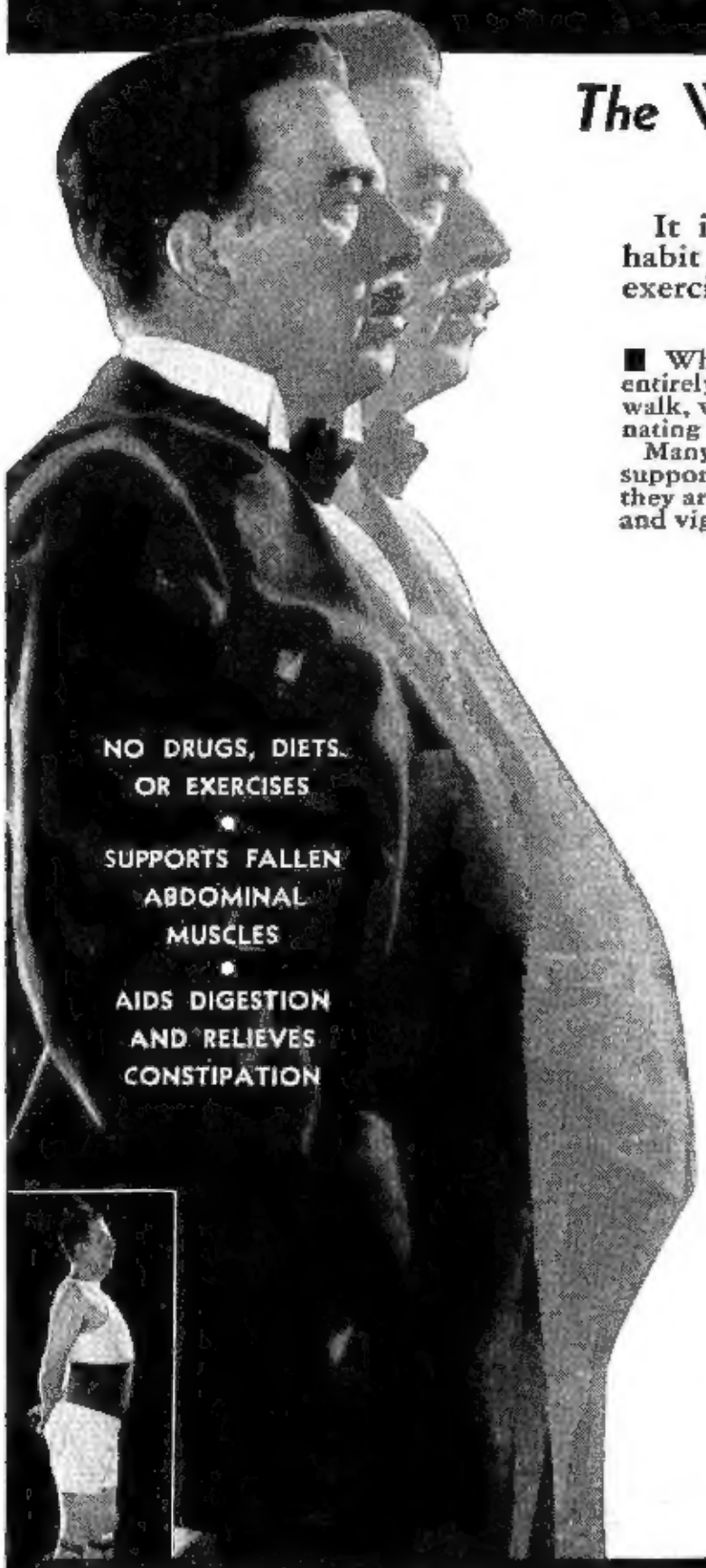
SCIENCE FICTION LEAGUE

SEE PAGE 1061

"EARTHSPOT"
By Morrison Colladay

25¢

"I REDUCED MY WAIST 8 INCHES WITH THE WEIL BELT" writes GEORGE BAILEY



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■ When you wear the Weil Belt you will be completely comfortable and entirely unaware that its gentle pressure is working constantly while you walk, work or sit . . . its massage-like action gently but persistently eliminating fat with every move you make.

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So Many Men Are Delighted with the Wonderful Results that We Make You this Unusual Offer . . .

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W. L. McGinnis
Livermore, Cal.

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. . . it will cost you nothing!"—signed GEORGE F. JOWETT

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☐ All 6 Books for $1.00.

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ON THE COVER this month we see the destruction of New York City by a deluge. The Earthspot at the north magnetic pole melted the ice-caps of the world, causing the oceans to overflow, covering much of the low-lands. (From "Earthspot" by Morrison Colladay.) Cover by Paul.

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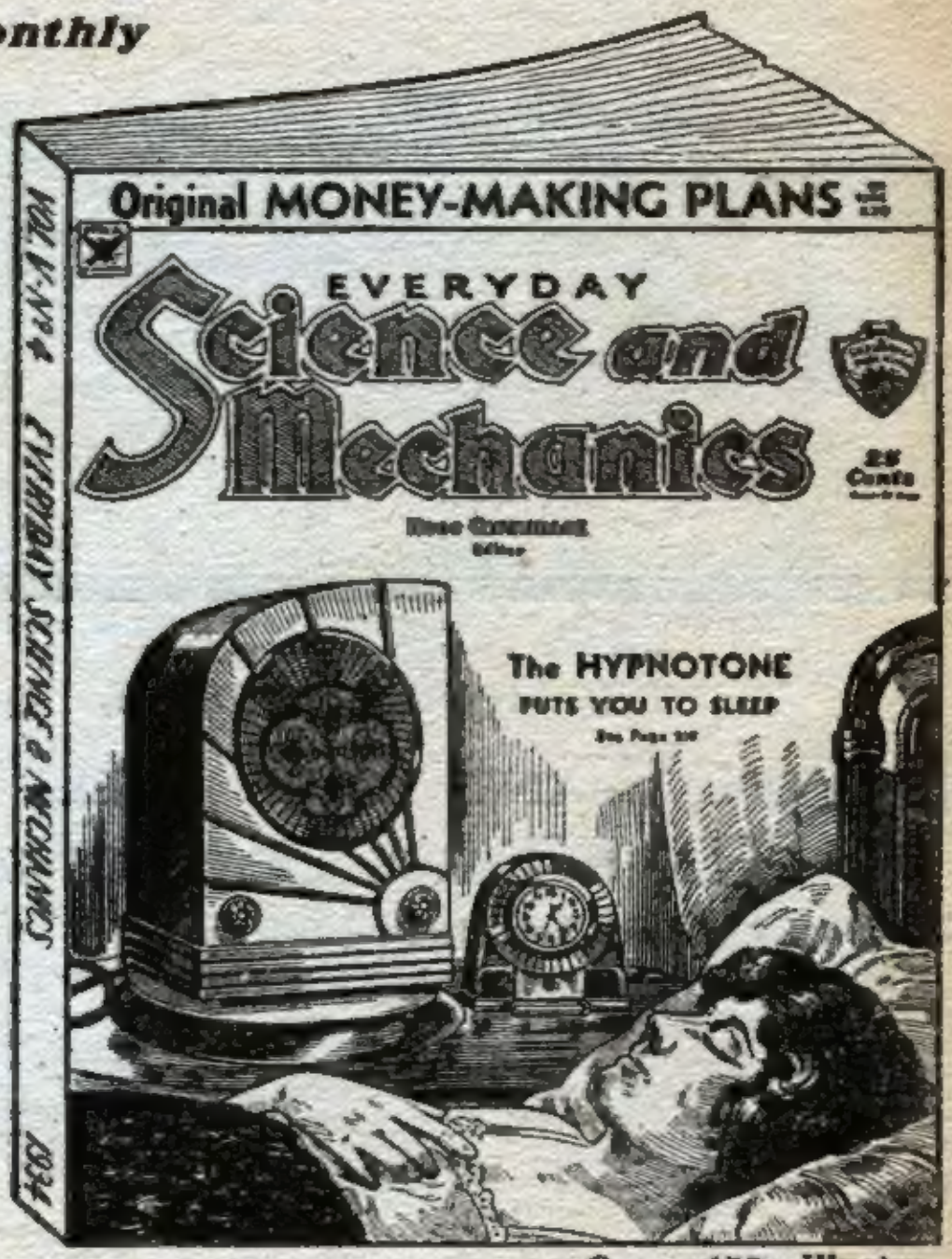

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VOLUME 5
No. 10

WONDER Stories

MAY
1934

. . . . Prophetic Fiction is the Mother of Scientific Fact . . . .

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THE SCIENCE FICTION LEAGUE

By HUGO GERNSBACK

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THE SCIENCE FICTION LEAGUE has been organized as a noncommercial membership organization for the furtherance and betterment of the art of Science Fiction.

It is a well-known fact that, since Science Fiction came into activity with the historic stories of Edgar Allan Poe, its adherents have increased in number year by year.

Many famous authors have tried their hand at this imaginative type of fiction, which has a more or less scientific background; and such stories have appeared from time to time in various publications in many languages throughout the world.

But not until 1926, when I launched my first Science Fiction magazine, was any concerted movement possible; previously readers of Science Fiction found it necessary to look through hundreds and even thousands of publications in order to discover their favorite literature.

Today, there are a number of excellent periodicals which concentrate on Science Fiction, publishing only such fiction to the exclusion of everything else.

The movement since 1926, has grown by leaps and bounds until today there are literally hundreds of thousands of adherents of Science Fiction scattered throughout the entire civilized world.

There are also many active Science Fiction enthusiasts—the so-called Science Fiction fans, who make it a point not only to read every scrap of Science Fiction that has ever appeared in print but actively to collect such stories, tabulate them, give them a proper rating, etc. There are at present, also, a number of scattered clubs and organizations, associations, etc., all over the world, which exchange information on Science Fiction, and otherwise further the art.

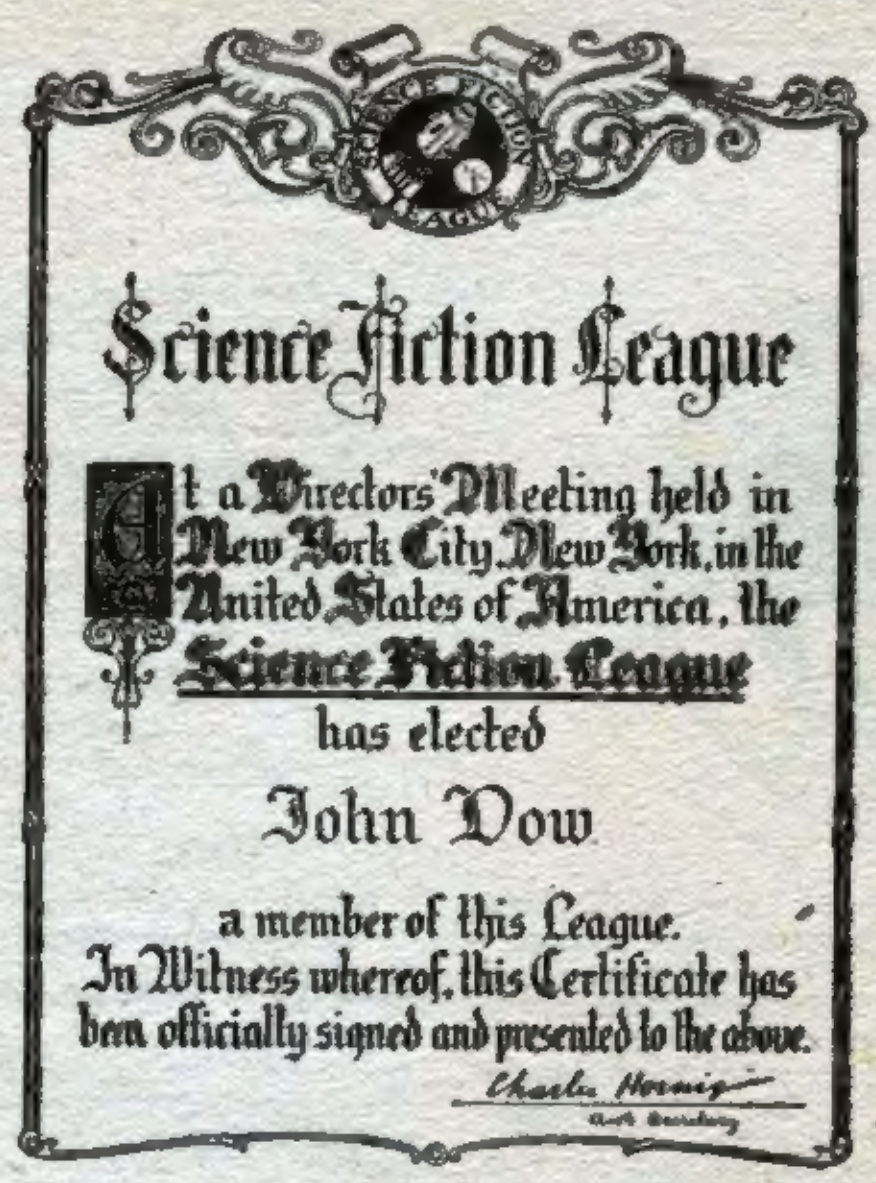
Some of our greatest authors, such as Edgar Allan Poe, Jules Verne, H. G. Wells, and many others, have tried their hands in Science Fiction, and many prominent authors of unquestioned literary ability have lent their names to Science Fiction. *And yet, the movement is still in its infancy.* The movement is akin to the state of amateur radio before broadcasting appeared: the radio amateur movement then was confined to a few thousand earnest young men who pursued the new art as a hobby. The great public did not come into radio until broadcasting arrived in the early 'twenties. A similar condition prevails in Science Fiction today. The movement still has not reached the great public, but efforts are made by all Science Fiction enthusiasts to spread its vogue from year to year. The motion pictures have already been converted, if only partially, to Science Fiction, and a number of

excellent films on Science Fiction have been presented to the public at large.

Much remains to be done as yet. The public, and indeed, many parents, still look upon Science Fiction as something bordering on a mixture of dime novels and Nick Carter stories. The reason is, mainly, that the public never has had a chance to read such stories or take them seriously.

The average parent, and the man in the street, has as yet not discovered the great and fundamental truth that Science Fiction is highly educational and gives you a scientific education, in easy doses—sugar-coated as a rule. The average man is not scientifically inclined and misses much in life because of his poor scientific education. When he is converted to Science Fiction, his scientific education quickly becomes such that, sooner or later, he understands what is going on all around him, which his fellow man is usually ignorant of.

In the school and college room, young men are helped along with their scientific education, in an unmistakable manner. This has been pointed out by many educators, time and again. Particularly those individuals who are not mechanically or scientifically inclined are quickly made to grasp the fundamentals of science through Science Fiction. The purpose of the SCIENCE FICTION LEAGUE, naturally, is to disseminate and spread the cult and art of Science Fiction in the most energetic manner. It is held, by the founders, that the time for the movement is ripe, and that the public at large should begin to know the benefits of Science Fiction and be turned from meaningless detective and love trash to the elevating and imaginary literature of Science Fiction.


Science Fiction League
At a Directors' Meeting held in New York City, New York, in the United States of America, the Science Fiction League has elected
John Doe
a member of this League.
In Witness whereof, this Certificate has been officially signed and presented to the above.

The handsome membership certificate presented to all members of the SCIENCE FICTION LEAGUE

This, however, can only be accomplished by thousands of LEAGUE members who are to broadcast the gospel of Science Fiction throughout the world.

By word of mouth in the school and classroom, by getting new readers to read Science Fiction magazines, by inducing motion-picture corporations to run Science Fiction films, by getting newspapers to publish Science Fiction stories, by getting broadcast stations to broadcast Science Fiction, etc., the movement can be made to take on tremendous proportions in the years to come.

The founders of the SCIENCE FICTION LEAGUE sincerely believe that they have a great mission to fulfill. They believe in the seriousness of Science Fiction. *They believe that there is nothing greater than human imagination, and the diverting of such imagination into constructive channels.* They believe that Science Fiction is something more than literature. They sincerely believe that it can become a world-force of unparalleled magnitude in time to come.

And for that reason, they have lent their names to the movement, in the hope that it may blossom into something that will endure in the future and that will fire with enthusiasm future generations.

Rules of the League

I, the undersigned, do hereby apply for membership in the SCIENCE FICTION LEAGUE upon the express condition that by so doing I do not assume or incur any liabilities, dues, assessments, or any financial obligations whatsoever, and if accepted, I do agree to follow and abide by the rules and regulations of the LEAGUE, as set forth herein, and all other rules and regulations which may hereafter be adopted.

Rule 1.—That I will observe all rules and regulations of the SCIENCE FICTION LEAGUE laid down herewith.

Rule 2.—That I will, at all times, use my best efforts for the dissemination of Science Fiction to the best of my ability, by mail, by personal solicitation, whenever the occasion arises.

Rule 3.—That I will promptly answer all correspondence addressed to me by LEAGUE members.

Rule 4.—That I will be governed by the rules and regulations of the SCIENCE FICTION LEAGUE, and will help in promoting the principles for which the SCIENCE FICTION LEAGUE stands, so far as shall be in my power, as long as I remain a member in the LEAGUE.

Rule 5.—I agree to return membership badge and certificate if, for any reason, my membership is discontinued.

The SCIENCE FICTION LEAGUE is international, and has as its members Science Fiction enthusiasts all over the globe.

The SCIENCE FICTION LEAGUE is not sponsored by any group of wealthy people, nor is it hampered in its work by commercially inclined factions. Instead, it is supported wholly by the

enthusiastic work of its own members. There are no dues or fees of any kind, and the LEAGUE has no income whatsoever, except from the sale of a number of items which are purchasable only by the supporting members of the LEAGUE. These items are essentials, for SCIENCE FICTION LEAGUE members, and in all cases have been selected only in order to enable Science Fiction enthusiasts to carry on their work with greatest efficiency. In no case does the LEAGUE sell commercial products, books, or literature of any kind.

The LEAGUE, however, does provide the essentials necessary to carry on the members' work efficiently. The following items are available:

Emblematic letterheads for members' correspondence;

Insignia (also called lapel buttons) to make it possible for LEAGUE members to recognize each other;

Emblematic paper seals, with LEAGUE facsimile;

Emblematic envelopes.

All of these essentials are sold only to SCIENCE FICTION LEAGUE members. They are not obtainable otherwise.

They are priced at cost, plus a small percentage to defray the normal operating cost of the LEAGUE.

If, from time to time, other accessories are adopted by the LEAGUE, members will be informed of such items.

GET YOUR BUTTON!

The illustration herewith shows the beautiful design of the "Official" LEAGUE button, which is available to everyone who becomes a member of the LEAGUE.

The requirements for joining the LEAGUE are explained elsewhere in the accompanying article. The button measures ¾ inch in diameter and is inlaid in enamel—four colors—gold, red, white, and blue.

Purpose of the League

The SCIENCE FICTION LEAGUE has only one purpose, and that is continually to broaden the scope and to popularize the art of Science Fiction.

Local Chapters

The SCIENCE FICTION LEAGUE headquarters is naturally interested only in co-ordinating the workings of its members as far as this is possible. The LEAGUE can only be of help in influencing various units, and it is felt that this can be done best by helping to bring into existence active local chapters.

While in some cases, in the smaller communities, it may not be possible to have enough members to form a local chapter, it should be recognized that a moderate-sized city may have several chapters of the SCIENCE FICTION LEAGUE. For that reason, the name of the parent body has been made short, and has purposely been so chosen that it will lend itself readily to organization of the various local chapters throughout the country and throughout the world, because the LEAGUE is international in character.

Suppose you live in Smithville, it therefore behooves you to organize the SMITHVILLE SCIENCE FICTION LEAGUE. It is advisable, and so will be required, that local chapters should identify themselves by having the name of their city first and the name of the parent body, SCIENCE FICTION LEAGUE, following it. This will give the local chapter its required standing with the parent body, and will entitle it to a

listing in WONDER STORIES (which publication will be the printed medium and house organ of the SCIENCE FICTION LEAGUE).

Articles on how to proceed in forming local chapters, and other information, will be published in the forthcoming issues of WONDER STORIES. One of the important functions of the LEAGUE is to obtain as much publicity for Science Fiction as possible. If one of the members, or one of the local clubs, has been instrumental in getting newspapers, broadcast stations, film corporations, etc., to exploit Science Fiction, headquarters of the SCIENCE FICTION LEAGUE naturally wishes to know about this. Due credit will be given either the member or the club, as the case may be, upon proper documentation sent into headquarters. If you, as a member, are, for instance, successful in getting your local paper to print Science Fiction stories, which may be reprinted from any of the Science Fiction magazines, or otherwise are instrumental in getting the newspaper to mention Science Fiction, you are asked as a member to send this information to the New York Headquarters. Due mention and credit will be given the member of the club in the forthcoming issue of the magazine, to show other members what you have accomplished. A regular department in WONDER STORIES will be open to SCIENCE FICTION LEAGUE proceedings from month to month.

Many other interesting activities are planned and will be described in WONDER STORIES from time to time as definite arrangements have been made. There will, for instance, be special LEAGUE meetings, and talks by prominent Science Fiction authorities, authors, writers, etc. When space can be obtained, the LEAGUE will sponsor exhibits or collections of Science Fiction literature and stories, so that members can get together and meet each other, etc.

As to the organization of Science Fiction clubs, the directors of the LEAGUE are particularly interested in bringing to life local chapters of the LEAGUE. The purpose of these local chapters is to band together as many Science Fiction enthusiasts as possible. The local chapters will have their own meeting rooms, which may be at a high school, university, or elsewhere. Local hotels, frequently, are glad to provide local LEAGUES with a room where the members can meet at stated periods; or, if this is not possible, LEAGUE quarters may be established at a prominent member's home.

If you wish to form a local chapter of the LEAGUE, it is, of course, necessary that all members must also be members of the parent SCIENCE FICTION LEAGUE. Usually four or five or more members get together and nominate other Science Fiction enthusiasts for membership; the blanks are then forwarded to LEAGUE headquarters. In due time, the new members are enrolled and the local LEAGUE chapter is then ready to function. To be sure, LEAGUE headquarters must be notified of the name of the new local LEAGUE, as explained under the chapter, "Purposes of the LEAGUE." A list of members must also be transmitted. Upon receipt of this information, the Directors will send to the local LEAGUE an official certificate on which it is stated that the new local chapter has been recognized by the parent body. The local chapter is then ready to function. If new members of the local chapter are to be enrolled, they must FIRST be members of the parent SCIENCE FICTION LEAGUE. This, then, makes them automatically eligible to join the local chapter.

In all cases, the directors urge members of the SCIENCE FICTION LEAGUE to get their lapel button which they should wear at all times. It not only gives the members standing, but it also attracts new members and helps along the good cause.

As explained before, the SCIENCE FICTION

League is not a commercial organization, which is in distinction from other organizations of this kind. No one draws a salary. None of the directors derive any financial benefit from the League whatsoever. Whatever money is received from the proceeds of the essentials (explained elsewhere) is re-invested in the League for the betterment and furtherance of all that the League stands for.

These moneys are employed in circularizing new members, paying for postage, clerical help, and for incidental handling expenses of the League correspondence; and in maintaining an up-to-date card file where members are recorded.

From all this it will be readily understood that it is an obligation of every League member not only to support the League morally, but financially as well, in a small degree, by buying as many of the essentials as members find themselves financially able to afford.

Privileges of the Members

The instant you become a regular member in good standing of the Science Fiction League, you then become entitled to certain privileges which, in a way, will immediately be of financial benefit to you.

The Science Fiction League will be recognized by most publishers of books and magazines, and other organizations. By using the official League letterhead, which the Science Fiction League sells to you at a very low cost, you are automatically put in a position to obtain the best prices on books, subscriptions, etc. When writing to commercial firms in this class all you have to say is, "As a member of the Science Fiction League, will you kindly allow me the customary discount to which I am entitled?" This request, in most cases, will get you a preferential discount, while private individuals cannot obtain them. The same is the case when you display your Science Fiction League button in bookstores. Similar requests will, in many cases, get you a courtesy discount from the stores. Nor is this all. As mentioned above, the League maintains a complete card file of all its members. Very frequently, publishers will request the use of this file from headquarters to distribute their circular matter to members.

Headquarters makes the stipulation that no publisher may use the name file unless the publishers are willing to give the members a preferential discount in their offerings.

Therefore, as soon as you are enrolled as a member of the Science Fiction League, you will very frequently get special money-saving offers on all sorts of books, publications, etc., which you might never get otherwise.

Membership Certificate

Immediately upon enrolling as a member in the Science Fiction League, you are entitled to a free membership certificate, as printed elsewhere. There is no charge for this certificate if you call for it in person. See page 1183 for further information. On each certificate is printed the name of the member; and this certificate can be mounted and hung in an appropriate place for display purposes.

These certificates are only furnished upon your filling in and sending in the blank printed elsewhere. This blank must be signed, since it gives all the information, as well as pledge, of the new member.

There are no other requirements to get your certificate and to become a member, except these stated here.

In other words, all that you require to become a member is that you fill out the blank, which automatically enrolls you as a member of the Science Fiction League.

A membership blank is printed in these pages and can be filled out by the applicant.

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Official League Insignia

An official badge or button, securable only by Science Fiction League members, is illustrated here. It has been designed especially for the League members. It is a distinctive as well as a striking design, and measures three-quarters of an inch in diameter. It is inlaid in real hard enamel in three colors—red, white, and blue.

The button is heavily gold-filled, and is guaranteed by the makers not to tarnish for two years. They claim that it will not turn "brassy." You will be proud to wear one of these distinctive badges. It will serve as a means to bring together members who otherwise might not know each other. The Science Fiction League furnishes the button. You will find more complete details of the League essentials on page 1183 in the rear of the magazine.

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For additional information concerning the essentials of the

SCIENCE FICTION LEAGUE

and their costs, see page 1183 in the rear of the magazine.

(Illustration by Paul)

I took aim at another target, fired, and one of the others fluttered on with a broken wing.

DRUSO

By FRIEDRICH FREKSA

(Translated from the German by Fletcher Pratt)

PART ONE

● Conformably to the request of the Great Council of Atlantis, I here set down the tale of the wonderful journey we four residents of the twenty-fourth century made from one period of time to another. We left behind us a world prosperous and happy, without a care, to enter one 283 years later, sunk in misery and despair, in which the whole race of mankind had become hardly more than domestic animals, under the power of the robber-star—Druso.

But to we four it was given to kindle the holy fire of the struggle for freedom against the Drusonians. We conquered, because the inheritance of human-kind in science, in patience, and last but not least, in pride, remained still inexhausted.

I am now in my seventy-third year; or if I count in the time of my unconscious journey in sleep, my three hundred and fifty-sixth. I have been through too much to do more than report what I have seen, simply and without any pretense at possessing the art of the story-teller. Much of what I am going to tell you Atlanteans will seem obvious, since you have grown up in a new age of swift scientific progress; but much also will doubtless seem foreign and strange to you.

Nevertheless, I must include everything in order to miss nothing, and above all, I must explain the two great technical devices that served us so well in the combat for freedom. The knowledge of biological Somnium (or Deep Sleep) was one. Without this, Judith and her two great children, my other two companions and myself would never have reached across the two hundred and eighty-three year gap into the Atlantic Age.

Without us and the scientific treasures in the vaults of the Rhine-Aachen station, the things that happened would certainly not have happened so soon—perhaps not at all. But of all the things that we brought out of the earlier age, the greatest was the Televisor. By means of it we were able to observe the Drusonians, to develop the scientific defenses of mankind against those curious insect-folk from another star, and to overcome their mastery. But already in the memory of living men, both inventions have been inextricably bound up with the fate of mankind—both the Somnium and the Televisor. Without the Televisor, the white race of Atlantis could never have worked out its destiny. Therefore, I will pause to explain how these two inventions were developed.

Mankind had become weary during the frightful twentieth century, the age of

● **Our readers have always been enthusiastic over foreign science-fiction—particularly the German. The present tale, like all German stories, is characterized by its thoroughness of plot and action. As an interplanetary yarn, it is a masterpiece and the author gives it an altogether different treatment than would our American writers.**

We are not introduced to the creatures of another world on the first page—nor in the first chapter, but the story develops gradually, unfolding with increasing interest until the reader feels as though he has lived with the characters. It is a human story with all the convincing qualities of a literary accomplishment.

We have gone to considerable expense to import this story and have it translated, for we know that it shall be favorably accepted as proven by the increasing number of demands that we have received for German translations.

self-destruction. From the year 1900 on there were ceaseless wars on the earth, and the machines of destruction had become so powerful that men were no longer their masters. Wars of extermination succeeded one another in an ever-growing technique of producing death. To this age in the 21st century, at length, an era of peace succeeded. And it came about through the impetuosity of the men of the North American continent who had succeeded in bringing all the peoples of the earth under their rule.

The problem of war and its prevention was thereupon fully studied by the greatest scientists and clearly worked out. The desire to labor, to do things, made war necessary. This desire was rooted in the technical progress of some countries on the one hand, in the growing population of others on the other. At last, the full meaning of a chance phrase pronounced by a statesman of the 20th century was realized: "In our neighbor's country there are twenty million people too many for us ever to be at peace." World peace could only be when the earth held only just so many people as it could support without pressure developing from within the nations themselves. In the early ages, when man had not yet reduced the earth to obedience, nature herself saw to it that there were no surpluses of population. But when, through the advance of medical science, the average age of life was raised from the 21 years at which it stood in 1700 — thanks to the number of infant deaths—to the 60 years it had attained by 1990, it became clear that only a great union of peoples to regulate the number of births that should take place would bring the desired universal peace.

Atlanteans, this is a problem that does not disturb you, since the earth is once more sparsely inhabited and you can multiply as you wish. But I warn you that the problem will return once more and mankind may yet again mourn its failures of the past.

At Geneva, the city in which a League of Nations once had its seat, the treaty for the regulation of births was signed in 2012. The League appointed commissions of observation for each nation. The governments themselves were forbidden to take any measures that hindered the work of regulation and education. At that time, many scientific means of making mankind unfruitful without working harm were known. They were the results of the great age of biological research that so enriched mankind about 1900. But these means were not to be used in any careless or ill-judged fashion. The basic idea was that only the best genealogical stems, from which mankind could really expect something, were to be allowed to propagate. Two classes of people were thus established — the fruitful and the others. And from these arrangements sprang much sorrow and trouble for the world.

But these were only the forerunners of the great movement that gripped humanity and wasted it like a fever. There were riots all over the world. Apostles of fertility appeared who preached against all medical science and sanitation, holding that it was better to have children and let them die of disease than to limit the natural fruitfulness of mankind. The great national governments almost disappeared; within half a generation, political offices were held, in most cases, only for the honor the title conferred. With everything in the hands of the scientists and engineers, there was no need for government, and with the development of the new form of family life, the age of self-responsibility, as it was called, came into being. The experiment of converting all the citizens into state officials had taken place some time before in Russia, where the curious effort to gather all the people into artificial collective communities had been made. That had failed when the necessity for labor became so small that there was no longer any way of imposing responsibility on the individual. But now new motives for responsibility were given, since to maintain the world population at the desired level required the remaking of humanity.

This period of the New Order lasted

perhaps half a century and came to a sudden end, wrecked on the yellow races who had been accustomed to hold fertility as the holiest of all virtues by training and racial feeling. The most frightful of all wars, a war to annihilate mankind, took place; it did not quite succeed, but the consequences very likely produced a natural and unnoticed limitation of population.

● In China, after an endless series of civil wars, a peace was at length arrived at through the pressure of all the other powers of the planet. This peace is known by the name of the great president, Sung Fung Li. His son and successor, Sung Yan, was charged with the heavy duty of enforcing the limitation of births. When he attempted it, he realized for the first time how heavy a duty it was, and it is likely that in his mind there then awoke the dream-picture of becoming the emperor of an entirely Mongolian earth.

Twenty-three years after the Geneva Treaty of 2012, a journalist, by the name of Richard Cordel, asked for an interview with General Peasonby, the head of the American Department of Public Safety. He said he had important news. The journalist had been through inner China on a reportorial mission whose results were to be broadcast through the whole world by means of the radio and Televisor.

Peasonby had him brought in; he had examined him in the moving picture on the screen and noted a striking resemblance to an old friend of his, Captain Richard Scott, who had been lost in interior Mongolia nineteen years before. When the two men were together and had conversed for some minutes, Peasonby was more and more struck by the journalist's resemblance to his old friend. Then Cordel began to mention events at West Point and in the early years of army service which Peasonby and Scott alone knew, until the general cried at last, "If you were twenty years older, I would swear you were Richard Scott!"

The visitor handed a card across the desk. "What I have to tell you, Peasonby," he said, "is so incredible that I dared not mention it until you yourself had recognized me."

What he had to tell was this: On his trip into China, Scott had discovered active military preparations going on in spite of all government agreements and treaties. There were factories operating in the greatest secrecy. Whole provinces were practically closed to Europeans. Scott had gone into interior Mongolia to search out these mysteries. In this district, a new race had grown out of the intermingling of Chinese and Russian. Scott had secured the papers of a tea-merchant who had gone bankrupt in a gambling hell and penetrated the country. He enlisted in the Chinese camel-police, and since he showed himself clever and intelligent, was entrusted with the mission of entering the Palai highlands and secretly raising recruits. He became a Group-Commander and was assigned to a chemical warfare division. Scott learned that the Chinese had developed a chemical method of overcoming all resistance within whole square miles of territory. It was a species of flame that gave off an extraordinary amount of light, blinding the eyes and destroying the nerves, but without damaging, to any great extent, the material resources of the territory where it was applied. The Chinese called it "cold fire" and Scott was of the opinion that it was the most terrible war-weapon yet developed. It was in this chemical warfare school also that he learned other facts; and since we had to learn his account almost by heart as do schoolboys, I set it down as I learned it in my youth:

"I worked with my men for six months when we were ordered out on a march in the Alahan Mountains. There we had a week's rest with no duty and a great deal of comfort. Then came doctors to vaccinate us, a thing that struck me as odd, as the Chinese in these high, healthy districts never used to do anything of the kind. After the vaccination, which took place in the afternoon, we were sent to bed very early. I remember feeling extraordinarily heavy and tired. When I woke again, it was night. I was lying un-

comfortably in a dark, cool room that seemed to be hewn out of solid rock. I heard the voices of men; they were talking in South Chinese, a dialect I do not understand very well.

" 'Yes,' said one of them, 'but you must remember, Doctor, that among the thousands we have put under the hibernation, there will be some who will not come to. The light colored one there'—and under my eyelids, I noted he was pointing to me —'must have something besides pure Mongolian blood in him. There are others like him, with southern blood, and they really ought to have a different vaccination formula than the pure Mongolians. If there were only some certain means! But, we shall see; we shall see. We'll give him a good position and if he will, he can take part in the wakening of the army.'

"These curious words made a considerable impression on me. I wondered what was coming next and gathered all my strength to watch what was going on around me.

"As a matter of fact, I was given the most careful attention by the doctor. After several days, I was ready for duty again and found that our division was as before, in the Alahan mountains. We were given new instructions, especially with regard to the "cold fire," which seemed to have undergone considerable development.

"Mongolian merchants came through with a caravan, selling tea, sweetmeats, and pieces of silk. And from their conversation, we discovered that we had been sleeping for twelve months. We could not talk much with these merchants, as they spoke a dialect different from ours. But as I wandered around the place where they had had their camp, I found a torn copy of the *Orient Times*. It bore the date February 5, 2035. Either I had gone crazy, or since our march into the Alahan mountains, eighteen years had passed.

"Who could explain the mystery? The men were as stupid as so many trees. They did their work; they ate and drank. They were content as only Asiatics can be. And the officers were silent. Even when my duty took me into their presence, I heard nothing about what I wanted to learn. Evidently, the vaccination was the secret —but—!

"Then, after two months more of training, an order for another vaccination came through. And now it became altogether necessary to find out what was going on.

"I spoke with my particular comrade, a clear-skinned northern Chinese, suggesting that we exchange places at the vaccination. He would get a double dose and I none; I told him it made me sick. For a small sum of money, he agreed.

"By dark, we all lay in our barracks, everyone else sleeping like the dead. I crept out, got a man from the outermost line into my bed, exchanged my badges for his, and noticed that toward morning, a number of trucks appeared. Into these the sleeping men were packed, laid in straw like skins of wine. I succeeded in getting into one of these trucks, which immediately filed off into a distant mountain district. Here I got out of the truck and hid to observe what followed. The sleepers were taken from their places, undressed and plunged into vats filled with a changing-colored liquid, then hung on ropes as though to dry. I poked around and discovered that a system of rails ran into the mountain; on these rails ran more trucks which were taking the corpse-like soldiers into the mountain. Toward evening, I crept along the track into the mountain. There was a guard of medical corps men on duty, but I managed to steal one of the white mantles they wore. I found that great caves had been hewn out of the rock and converted into kinds of thermos bottles in which the temperature was maintained at a steady 40 degrees. Everywhere there were thermometers, hygrometers, registering apparatus of all kinds. And all the place was lined with shelves on which, on leather cushions, reposed the sleeping naked soldiers.

"A doctor appeared and asked me what I was doing there. I said I had had an overdose of opium. He gave me an injection and told me to go to bed. I went out at once, and although the injection he

gave me worked rapidly, I had still enough energy to get behind a rock pile. There I slept all through the next day, and when I woke, I found that the medical corps men had been withdrawn and the entrances to the caves closed with great metal doors. Over the door in the badly written letters characteristic of Chinese was written 'Si Hanon Coal-Mountain District, Closed Shaft No. 3.'

"I noted this down, then went out into the country and managed to join a wandering Mongolian band. In the course of the journeys that followed, I discovered a great many more such places as the one I had left, all in the Alahan mountains.

"Gradually it became clear that there were a number of doctors traveling through the country on the pretense of hunting expeditions, who inspected these caves from time to time to see that the sleepers were still living and capable of being awakened to activity.

"The Chinese, as a method of preparing for a great war, had employed their knowledge of biological hibernation. We know about the experiments that the German professor, Wahringer, made in Tübingen on the hibernation of animals. He succeeded in bringing them back to full activity after ten, fifteen, and even twenty years. The only condition was that the animals belong to a species that ordinarily hibernates through the winter. That men with northern blood have a tendency in this direction is a known fact, and also that the Mongolians belong to the races with northern blood. Very likely the Chinese have woven their plans around this core. They are laying away full battalions of troops in their mountains. The life-functions of the men are brought to a standstill as with bears or fish that are frozen in ice. Their strength is not altered, their memories and intelligence remain as before. It is only necessary to awaken the sleeping battalions from time to time and train them in the use of the latest weapons. Then they are sent to sleep again. And while the Chinese may only have an army of six hundred thousand men according to the Geneva treaty, they really have a sleeping army of millions today. They need not fear losing battles; they have an inexhaustible reserve of trained troops. This army costs little, since the men do not eat or consume other articles. They have also—and I have proofs of it—put hundreds of thousands, even millions of young women to sleep in the same fashion. They see to it that in case a great Chinese war should break out, still more reserves lie in the heart of the earth, like the grubs of some insect."

● When the sweep of the Chinese plan was fully grasped by Peasonby and the American government, they remembered that imperialism itself was a Chinese invention, which the Cæsars of ancient Rome had done no more than to imitate.

Hurried inquiries were undertaken without regard to expenses. That the Emperor Sun Yan intended to become the lord of the whole earth and to destroy all races but his own became a certainty. The destruction of the rest of mankind had been prepared with the aid of the greatest of all sciences, the science of life. While the world up to now had made war with the aid of naked strength, of chemistry and of physics, China was making hers by laying up reserves of life in the heart of the earth. After the frightful destruction of a new war, fresh armies, a whole new people, would leap from the heart of the mountains, and unhampered by any moral principles, take possession of a world weakened by war. But the very means of providing for this conquest had turned against the Chinese, when Richard Scott had been placed in the hibernating sleep to wake and give the news to the world. At last, the menaced whites woke to the need of defense.

"These sleeping Asiatics must never wake!" wrote General Peasonby at the foot of the official report he made on Scott's revelations.

By this time, the Televisor which Erik Hessborn had invented had been developed to a remarkable degree. It had grown out of the early experiments in heliogra-

phy, and later those in telegraphy of pictures. In the primitive times of the 20th century, photographs of the latest boxing-matches, beauty-contests, court-trials, and political events had been dispatched by telegraphy to the newspapers at greater speed than they could be sent by mail. Radio had been used to transmit pictures in the same fashion. Then came Hessborn with his ingenious idea of the radi-electric tongs. The receiver needed no longer to wait for someone to send him the image; he himself, when he knew the bearings of the place he wished to see, could find his object and focus it as one could focus an object in the old-fashioned camera, by setting it at any distance from five feet to infinity.

These new televisors were now built in enormous numbers, although the men of that age were not yet able to exploit them to the degree that we of 2300 succeeded in doing with our finer technical methods. With these televisors, the Chinese reserves were discovered in their cooling chambers. But the anxiety of the statesmen was so great that they only waited long enough to convince themselves of the fact, then hastily issued the edict: "Districts in which these reserves are stored must be destroyed."

At a given day, hour and minute, the whole of inner China was overwhelmed by a terrific torrent of high-tension electrical waves, and thereafter came destruction, silent, certain and frightful. All the mountains in which the sleeping armies lay were overwhelmed with the war-gases of the period. The Chinese Emperor himself was caught and killed by a decree of the Hague World Court, as a traitor to humanity. Sun Yan was placed in an electric destruction-furnace which attained a heat of eight thousand degrees in two seconds and his ashes were strewn to the four winds. The impact of the affair on China was so frightful that it was unnecessary to bind the Chinese to the limitation of their population for another two hundred years. But this terrible vengeance brought in its wake a great good. It produced in the whole of humanity a new interest in biological research, and when the two-hundred-year period had elapsed and the yellow races were again restored to their places in the international community, they were both better able than ever before to give and humanity to receive their peculiar gifts.

The matter of biological sleep was now thoroughly studied and experimented with, and forty years after the destruction of the Chinese reserves, a congress was held at Cologne, the chemical capital of the earth. Three Chinese were placed before the Congress; they were survivors of the catastrophe and were brought back to their senses before the Congress. Experiments were undertaken in keeping men alive but sleeping over very long periods of time. The consequence was that it was agreed by the scientific governments of the world that the traditions of the race should be preserved, not alone by annals and books, but also by living souls. It is a known fact that in three generations, the ideas of a people alter most profoundly. New standards of values replace the old, desires fix themselves on new objects, the future takes on another aspect. It is extremely difficult for a philosopher, or any other thinker, to place himself in the shoes of a man a hundred years before his time. Many ideas that have the deepest meaning for men of one day, yet remain undeveloped, never come to fruition until a century has passed. And frequently the great work of preparation that has been done on these ideas is lost by the delay.

Therefore, it seemed to the scientific people of the world a particularly desirable thing to preserve the spiritual traditions of their own day, and it was decided that every 99 years, a small number of thinkers and artists should be put under the Somnium, or long hibernation, so that their grandchildren might learn from living lips what mankind was thinking of a hundred years before. It was also obvious that, through the examination of these "ancestors," the success or failure of the experiment in breeding a new race would be clear.

It was also decided that the first persons

to be placed under this Somnium should be treated in the year 2100. A whole year was necessary to prepare the great underground chamber on the banks of the Rhine at Gross-Aachen. It was necessary to provide for the most perfect quiet and avoid any chance of damage. As a matter of fact, it was an expedition, preparing for the greatest journey of all, the journey through time, and required greater preparations than for a trip to the North Pole. The enthusiasm in the scientific world was immense and recalled the great days when man was first learning to fly.

CHAPTER II

Judith

● Now I must tell something about myself.

My birth, on April 25, 2267, took place under no happy auspices. When I came into the world, the verdict of the doctor was unpromising. If it were not that my father belonged to the Bentink family, which had already given a whole line of scientific leaders to the world, and that my mother was a Watler, from a family that had produced some of the world's greatest engineers, it is likely that I would not have been allowed to live beyond the cradle. The decision was delayed for twelve terrible weeks, as my mother often told me. Then I came before the Life Commission, whose decision in such matters was beyond appeal. It may be perhaps interesting to you Atlanteans whose joy it is to waken new life in the earth after the terrible diminution the human race has undergone, to know something of the manner of examining children in those days, to determine whether they were worthy of life. Girls were much more strictly examined than boys. The easy living conditions of our world, in which all heavy physical labor had been abolished and for which physical labor sport furnished only an inefficient substitute, had brought into operation an old scientific law—that when living conditions are easy, more girls and less boys are born. This had already worked out in our time to such a degree that for every hundred male children in the white races, there were a hundred and seventy females.

This had the consequence that the examination of female babies was much stricter than that of males. But the boys were sifted out through a fine enough sieve. There was a system of awarding plus points, which were arrived at according to formulæ which took into consideration the genealogy of the child, and followed it out more carefully than the lines of the ancient noble houses were ever traced. But these genealogical plus points were only added in at the last moment and in doubtful cases. Before they could be reached, the infant had to pass along a belt conveyer past a number of examination points. His bone structure and skull formation were examined; scientific methods of examination and comparison were applied to eyes, ears, nose, respiratory organs, glands, and nerve structure. By means of this strictly scientific examination and by the fact that the infant was marked only by a number during his journey through the Institute past the seventy different observation stations, a perfect impartiality and objectivity were arrived at. Even in adding in the results of the genealogical formula, the names were left out and only certain formula numbers representing the attainments of the family were used. I was only two and a half points above the lowest possible passing mark. Therefore, the decision was reached that up to my second year, I should be brought up in the open air in a warm and equable climate.

This produced for my mother the consequences that might be expected. She was a very gifted woman, but now had to forsake her vocation of botanical experimenter and hang altogether on my father who was the head of the Institute for Research into Extra-planetary Electrical Phenomena on Mont Blanc. My mother secured a leave of absence to take care of me and took me off to a health station in the high Taurus, in Asia Minor, located at a height of some six thousand feet above sea level. At the end of two years, she received at

last the news that she might again return to her beloved plants and take up again the intellectual tasks she had left. The genealogical commission, in view of my ancestry, had decided to impose upon me work in the open air, but particularly intellectual work. For this, a special education was necessary, and the commission, after examining me, determined that I possessed special ability in certain directions. And therefore, also, there was a special mark on my papers, filed away in the commission's archives—the famous "Black Period." The Black Period was kept a state secret and appeared on a person's papers only when they were subjected to a special chemical reaction. It means for those on whose papers it appeared, that they were not permitted to make a fruitful marriage without further examination. Nobody knew of these secret marks but the Commission, whose duty it was to bring them to light some eighteen years after birth by applying the chemical reaction to the papers. The original papers remained always in the archives as a precaution against accidents.

Everyone who intended to marry had to present him or herself to the Commission. They were given another examination, as impersonal as that to which the infant was subjected, and the final determination formula at the end of the examination took into consideration the Black Period. Naturally, there were a good many people who did not wish to make fruitful marriages—you have only to remember that there have always been monks and nuns on this earth. But for a man who really wished to do so, there was something shameful in being forbidden. Moreover, the strict regulation on new births and the very fact that fruitful marriages were not for all, made marrying and having children a mark of honor. And one must also agree that never before in the earth's history had the available women, thanks to the careful choice exercised at birth, been so lovely and so well provided with every gift of intelligence. Thus it is no wonder that one who was found "unmarriageable" should forget the world and wish to bury himself in some research institution there to prove his manhood by his labors.

But within me there was a certain natural strength. The law of contrasts was at work. I would have nothing to do with merely intellectual tasks. Somewhere within me an anger awoke at the discovery that others could run faster than I could, and my skinny little body with the somewhat too large head longed to build itself up. I longed for every form of exercise I saw the sports coaches teaching the other children, exercises in which I was not allowed to participate, for the tutor who cared for me thought it unnecessary for me to build up my body, holding that all my reserves of strength must be conserved to support a brain which had been indicated as highly organized. But my will to live overcame this difficulty. I wrung hours of exercise out of time almost by main strength. The long halls of the outdoor exercise-plazas, abandoned in rainy weather, called to me, and I sought them out then, always with my eye on the great clock in the center. I did thousands of knee-bends, learned to stand on my hands, built up my back-muscles and ran and boxed all alone. It could hardly remain hidden from my teachers too long. They let me join the sports as an experiment. Competition was a strong stimulant. I won the sport and swimming prizes in my school, and to the infinite joy of my father and mother, won two victories in the Olympics—the old classical English mile run and archery.

Thus all my tendencies were in the direction of natural science. My mother influenced me powerfully in this direction. During my vacations, I always sought her out at her work in the great clear, lovely conservatory, or followed her as she showed me the secrets of the inner lives of plants in the microscope. She always had `wers around her; their colors, forms and lovely odors excited me, and my love for the out-of-doors pushed me in the same direction. All the Bentinks had been researchers and adventurers, as the family chronicle tells, and in the old blood-thirsty days of wars, soldiers, gener-

als, and men who forgot the life of the spirit for that of the flesh, they had been freebooters alike in life and love.

● But there was something else, of which I will make honorable confession. At the Olympic games at Naples, I had met the eighteen-year-old Judith Thyrberg who won the women's swimming race. We had found common ideals in each other and liked each other immensely. And she had said to me, as we sat on the terrace of the hotel beside Vesuvius and watched the homeward-soaring airplanes, "What's the use of all this exercise and sport? It does not replace the recreations nature meant us to have. I, a winner at the Olympics, tell you, Alf, that for two years, I have not felt right. I have run, swam, and done all the rest and still I feel that I have not had the exercise I need. But I remember when I was a little girl, how I wandered through the woods in the Andes mountains with my father. As you know, that is a sparsely-settled country where timber is the only product. For whole hours, we met no one. Alf, the man of my choice must have some profession that will let me accompany him on foot. Ah, walking is the most attractive method of human movement!"

And without knowing it, Judith arranged my life for me in that moment. There in the high mountains on the equator and farther south in the sub-tropical highlands lay the wild woods of our earth, still unmarked. Mankind had left these forests untouched to preserve something of the old natural life of the earth, both for study and to give the race a rich reserve of natural sanity from which to draw.

My mother was delighted with the project I laid before her. It was something of her own spirit that she saw wakening in me. She was my first teacher in what was to be my life work.

When a man has the genuine will to do a thing, he can arrive at his desire in spite of all difficulties and impossibilities. My desire was for the great forests. Without my early bodily deficiencies, the desire would never have wakened in me, for we men of the most scientifically-minded district of the earth were only all too prone to carry specialization to the last degree. Of course, we cared for our bodies; exercise had its daily place as washing our hands and brushing our teeth had their places. But this alone was not enough to prepare me for the great demands my profession made on my body, since in those wood and forest regions, a man could not even use the old automobiles, but must handle horses and mules, since the modern helicos did not permit landing on the little peaks and narrow ledges. One could cross lakes and rivers by motor-power, but in spite of all technical developments, the great loneliness of those forest-covered mountains was still the master of man's invention and forced the traveler back on his own resources.

There were certain scientists of our planet who investigated those lonely regions, but they did so under orders, and no one stayed there any longer than he had to. It will be surprising to you, since you know that the humanity of those days had been brought so close together through the televisor and its adjuncts that every man, when he wished, could have before him the speaking picture of another. But we had become excessively sensitive. The mirrored presence of another had a certain uncomfortable charm. We men had become attached to personal presence. We knew too much about these ghosts built up out of electrical impulses on which our forefathers spent so much time. The living actor was sought out and earned the highest wages, though the talking picture of another star was infinitely the better art. But we knew that the laughter from a living mouth fills the theater with a certain essence of the living soul that no mirrored image can give. We went eagerly back to the old forms of theatrical art. "To feel life" was the watchword of our age, and we hated substitutes. We strove to get back to genuine nature. Thus we had long since past that time in which the scientific means of nourishment predominated. Vitamins, calories, and all the

rest had been reduced to insignificant tablets one took without thinking about it. At first this created enthusiasms. But it was soon discovered that it produced consequences of the most serious kind. The digestive tract had been shortened to a length of six feet. And so this form of nourishment which spread over the earth with the speed of an epidemic, also contributed to soften our forefathers. We lived reasonably, since we had made discoveries enough for our needs. But all this will show you that, in spite of the greatness of our science, in spite of the limitation of our population, we had not attained a perfect fullness of life. We were pampered, over-domesticated, as my friend and school-companion Hurst said, a man who looked upon our whole civilization with skepticism. He was a tall, physically lazy, blond man, enthusiastic over the histories of old wars and adventures. He liked me.

"Alf," he used to say, when I did some new feat of strength, "in you there still remains something of the free wild animal."

He had made a collection of ancient films showing boxing matches, battles, and hunts. But he would have become angry if I had expected him to take hold of a rudder, a sail, or even a pair of skis. He would only say, "My head is too big to hold that!" paradoxically. And as a matter of fact, when one saw him sitting there with his small shoulders loaded with his great head, one had the feeling it was all his body could carry. But as a thinker, Hurst was truly astonishing. In spite of his youth, he was among the most important men of the day. He had the most profound knowledge of the recent physico-electrico-technical developments, and he employed this knowledge in the service of an ironical philosophy of life. When they praised him, he was in the habit of saying in his thin, not quite certain voice, "The others know all that and more, too. They have simply failed to arrange their knowledge in a practical way."

In contradiction to the pity that we people of those days had for those who, finding existence unpleasant, left it by their own hands, he had for them only words of understanding and praise. He explained it this way: the stratification of society does not permit any man to be without some occupation. Two "border-strata," as he called them, had developed in the existence of our days: the too-weak, who willingly left life behind, and the fanatically active, who were always complaining that the day contained only twenty-four hours because they wished to work forty-eight.

● Now perhaps you will be able to grasp the fact that there was considerable surprise when I offered to take up work in the forest of my own free will. Since I was still a very young man, my decision was much praised by the high officials and for three days no televisor portrait on earth was more in demand than mine. The televisor pursued me from the beginning of my day on, through work, recreation and meal-times and right up to the moment I went to bed. And the televisor pursued me even there, since romantic young girls all over the earth could only go to sleep when they imagined my breathing beside them in bed. The human imagination has always taken such forms. Naturally, Hurst praised me to the skies and he promised to visit me personally. I accepted the promise with delight, but doubted its fulfillment.

Only the one person for whose applause and assent I had hoped hid herself from me—Judith Thyrberg. I had hoped to see her appear on the white wall of my father's house between four and five, the usual hour when we people of the earth of that day communicated with one another. We spoke to each other through the telephone attachments and then appeared as mirrored images in one of the several frames that were in every living room in the world. It was a form of having tea together, with the difference that the mirrored image drank its own cup of tea. It was comical to call on someone in this way and discover that their zone was in the middle of the night, and somewhat uncomfortable to make a call while your own

country was in the middle of the winter and find the other sitting on a South Sea isle in the bright sunshine with a waving palm for a background.

But Judith did not appear and I was sick at heart. I was angry enough over it not to seek her out myself or speak with her over the telephone. Instead, I climbed into one of the high-speed airplanes and left at once for the country where I was to take up my work.

Everything there had a quick enchantment for me. It was something altogether new to feel a real horse between one's legs instead of the electrical exercising horse. Dogs which I had seen only as the fat and degenerate pets of civilized Europe, I beheld as the clever trackers and hunters they really are. What a surprise it was to live with an animal whose nose fulfilled the office of our eyes! I observed the fish and the impatient insects buzzing about. I was charmed with an existence that did not move to the rhythm of the machine.

Gradually, I worked out the conditions of life of these animals of the forest and plains. And there also I made a new friend, Franz Hochkofler, a descendant of an old family from the eastern Alpine region. He knew no greater joy than to set out with pick, climbing-pole, and knapsack to conquer the highest peaks of the Andes. There were sportsmen in the world who did this sort of thing during their holidays, but they were nothing to my friend who went out alone on his climbs and who only took me with him when he came to know me as one who had seen through our too-orderly existence to the heart of the real sense of nature. My mother was anxious when I spoke to her over the telephone about these climbs. But my father urged me on, and I remember the first time that my parents argued about me, albeit in a friendly way. My father left the table and went away, but my mother begged me to remain at the station at least for a few weeks, as she would have a message that would please me very much. And when I asked her what it could be about, she did not answer, but I knew—it could only be something about Judith Thyrberg.

But our meeting was not at all as it had been planned and did not take place down in Kurano, Las Palmas, the great Chilean bathing city. On a stormy night, I was notified that one of the inter-continental airships had been wrecked on the edge of the Kohinniu Mountains and that the passengers needed help. My friend Hochkofler, as one of the best mountaineers in the world, was also a member of the relief expedition. At the take-off, we were nearly wrecked in a bad squall, but our machine got away finally and arrived over the Kohinniu edge to see that the airship had come down on the side of a glacier. Its forward part was wrecked. The captain, with great presence of mind, had heaved out the big anchors and the colossus hung against the ice, its whole left side exposed to the fury of the storm.

We had no cable with which to rescue the bigger ship from this perilous position, so Hochkofler and I got out to see whether we could find a landing-place for our machine. We finally secured one, and speaking with our own ship through the microphone, told them where to land so that the necessary rescue materials could be unloaded and gotten to the airship in the least possible time. But while we were thus busied, an officer forced his way through the debris at the prow of the damaged liner. He called to us and pointed in the direction of the equator. We looked through our glasses and saw that a group of men were laboring through the ice like mad. They had the appearance of people who did not wish to trust themselves any longer to the perilously placed airship. I left Hochkofler on the terrace we had found, climbed down, pulling a rope after me, to which Hochkofler spliced another one as soon as it had run out. By this means, I got down the hundred meters to the group, who were completely exhausted from their short but dangerous and unaccustomed mountaineering among the ice. I perceived that most of them were athletes who had considered themselves well-fitted for such an enterprise; but exercise

in a gymnasium and in the open air are two different things altogether.

When I got nearer the group, I noticed two women among the men—and one of them was Judith Thyrberg. My heart stood still for a moment. It was an encounter of a kind you Atlanteans cannot well understand, since you are so accustomed to roam about the great empty earth and meet people in the empty wilderness. But for us people of an overcivilized planet, this meeting amid the ice, near a wrecked and stranded airship, was something beyond all experience. When I had gotten Judith and the rest back onto the terrace, she explained that she had been disgusted at the thought of seeing and talking to me by the televisor on the too-flat and civilized plain of the earth, and it had been her idea to come in person to see me in my wilderness; but this!—to find me as her rescuer amid the ice, was the most splendid of all.

The other girl in the group was Judith's friend, Maria Langland, a meteorologist from the Karaga research station at Archangel. After two years of work there, she wished to see a different kind of world, but three weeks in the great cities had caused her nerves, used to the loneliness of the Arctic, to rebel, and she had decided to accompany Judith. Accompanying her was a dark young man of graceful carriage, Dr. Flius. I did not think a great deal of him, but it was not hard to see that he had eyes only for Maria Langland, and it hurt him when Hochkofler took Maria in his arms and helped her along a precipitous ledge that was dangerous for those not accustomed to heights.

● The work on the airship went forward.

Hochkofler was the hero of the day, hanging from the smaller ship on a wire rope to fling the first connecting cable to the wreck. I perceived that Maria Langland had fallen a prey to the attractiveness of this strong young man. And while I was still thinking about this, Judith explained to me. "Flius is the chemist who discovered the new atomic-power motor. He came with us on Maria's account."

"And Maria?" I asked.

"She worked with him in Archangel. But you know how girls are. She likes him very much, but—"

I saw her glance pass me and turned to see what she was looking at. Hochkofler was helping a tall, thin person who seemed familiar to me.

"Hello!" I cried.

"Do you know him?" asked Judith.

"Very well. It's Hurst."

"Hurst, the physicist?"

"Yes, one of the best friends I have."

"I imagined it. He spent the whole journey in one spot, staring through the window, and made notes all night. He spoke with no one, that is, not willingly, and answered Flius in monosyllables."

Hurst had in fact made good his promise. My little white house, 1500 meters up on the side of Chiahuatal, was suddenly filled with guests who never could overcome their astonishment at my primitive mode of living. Even Flius and Maria Langland had lived a life at Archangel that was far from this. They saw for the first time the slaughter of a bull, the bringing in of the products of the chase. Hurst, who as ever longed for a free, natural life, could not stomach either stewed or roasted meat for two whole days after he saw the slaughter of the animal. He lay in his hammock for half a day to get rid of the impression this made on him, "though it is nevertheless necessary," he admitted.

"My inclinations all belong to the savage past," he said, "but I am so domesticated that I must live in a more highly civilized age." And when I asked him what he meant, he answered, "The expedition going out over the next hundred years will start soon. I am going to offer myself for it, and I think that after the next hundred years, in which men will be still more civilized, the right man will at last be in the right place. But of course, the desire to range backward into time will always be painful for me."

Poor Flius took the growing friendship between Maria and Hochkofler hard.

He confided in Judith. She advised him, "Why don't you speak to Maria?"

"We worked together at the same task for a whole year!"

"You *worked*, Dr. Flius?"

"Oh, well, you understand that there was an understanding between me and Maria without words. I have noticed that if two animals, male and female, live in the same way and eat the same food, the same chemical reactions take place in their bodies. And the animals certainly don't do much talking."

"Nevertheless, they have an understanding of another kind, Dr. Flius. We are men and women—over-civilized if you wish, as Hurst says. Therefore you must speak, like all over-civilized beings."

I overheard this talk between Judith and Flius; it seemed to me that I ought to take Judith's advice with regard to herself.

I had an inspection trip to make into the cold regions at the south of the continent. Judith wished Maria to remain at the house with Flius and Hurst, who were both not yet able to bear the fatigues of long marches. But Maria would hear nothing of it. Both the girls went on the trip with Hochkofler and me. That honest mountaineer, one evening as we sat by our campfire, burst out with, "Why shouldn't things go on like this? Let Judith marry you, Doctor, and Miss Maria shall come back and be my partner as soon as she is able."

● We laughed, but the girls were embarrassed. During the rest of the trip, they were a little nervous. When we returned, we discovered that Flius was no longer there. Hurst explained, in his sleepy voice. "He spent the whole time at the televisor, watching you. Everything he saw and heard, he put down in a journal, and read me the interesting parts in the evening. I told him that we would soon be congratulating two engaged couples, and that remark hit him so hard that he packed his bag and left the next morning."

Maria was thoughtful. Now for the first time, she seemed to understand Flius, and held back a little from Hochkofler. It was the more curious, since that very evening, my mother appeared on the wall in the living room of the house and we heard from her. "Have you not thought that you were made for each other?—Judith and Alf, Maria and Hochkofler?" she asked.

But the entrance upon a marriage had been so set around with restrictions of every kind by the governments of the world, that people looked upon it as the most serious step in life. Naturally, there were unofficial unions like those of old times, but both Maria and Judith were too proud for anything like that. In our age, the ruling families held a very high standard of morality. As for the others, they went on what were called "love-journeys" to the coral islands of the South Seas. There were thousands of tiny islands there, owned by the South Sea Travel Company, which one could visit in the company of the lady of one's heart for a shorter or longer time. Men who were considered stupid or silly were characterized with the words: "He has been to the South Seas twenty times, and hasn't any sense yet."

It was fate itself that spared Judith and me any longer period of waiting. During the night before she was to return, I was wakened by the sound of the televisor. I went into the room where the apparatus was, and on the screen saw my mother, who told me that my father, while making an astronomical photograph, had made a false step and had fallen down the iron ladder by the side of the great telescope. She said something more but I did not hear it; the only thing I knew was that my father was gone.

It is true that he had not played the part in my life that my mother had. But it was he who had taught me how to think, who had made me at home in the world of mathematical formulæ. To him I was indebted for all my knowledge of the heavens, the constellations, their histories and their meaning. It was he who had opened to me the doors of language, taught me the importance of the ancient etymological stems, and instructed me in the legends of

the old Atlantis. I remembered all the hours of talk we had had together about the universe and its meaning, hours in which my mother had had no part. How often had she come in while we were thus engaged to tell us that it was late, and then enthralled by the conversation, instead of packing us off to bed, got some refreshments ready and seated herself near us to listen. How much we had been a unit, we three—and now it was ended. All these pictures of my memory leaped out from the frame where the picture of my mother stood on the wall.

For a long time I sat there, and there Judith found me in the morning. She consoled me and in this consolation we found ourselves. Maria remained in the house with Hochkofler, as well as Hurst, who, taken with a sudden fever of work, was stretched in his hammock toiling over his formulas and paying no attention to anything. Judith and I went out with the small airplane to take the high-speed liner which should carry me to Europe in time for my father's cremation. And so, for us, death and the highest point of life and love came together. It was good to have her beside me, in mourning like myself. My mother, who sat broken and silent, was moved by our appearance, and she found it a consolation that we both, without opposition and without any hygienic conditions, were granted that permission for a fruitful marriage that even the savages ask from their gods. Then only did I learn that Judith had been a prey to the same anxiety as myself. That was the reason for her hesitation. She had gone to the government officials alone and made certain; and now we were happy in the permission to make a fruitful marriage. For she also had belonged to a particularly good family and had passed her examination as an infant only by the narrowest of margins, and like me, she also had built up her body by means of main strength of will.

You Atlanteans will find it altogether old-fashioned and curious, but for us, a great deal depended on not being found lacking at the final examination.

But the sadness that accompanied our young union continued. My mother, that strong and independent woman, was broken over the death of her husband, and in spite of all that the medical science of our times could do for her, she went out like an electric lamp whose wiring had been placed under too great a burden.

CHAPTER III

A Candidate for Sacrifice

● When fate is hard to us, it wishes us well. In the midst of my sorrow, I was called away to make a report of solar mirrors which had been set up in an effort to increase the productivity of the soil by the direct condensation of solar power. It was at one of those scientific congresses at which basic principles are arrived at. The principle of the thing was the use of the power of light in a way that made the new means compare with the old as the use of the power of the turbine compares with the power of the old-fashioned mill wheel. It was one of the last and greatest discoveries of my age, of whose later consequences and loss I am ignorant. All my energy went into the work. In the first place, I fought for the theory of the light-turbine. And my point of view won out.

I was exhausted when I left Sicily, where the congress took place, to return to the cool north. On a beautiful day in September, I met Judith again. We sat on the terrace at Ehrenbreitstein and looked down on the Rhineland, flowing with red in the sunset. This day stands in my memory as though it were my last day on earth. Down below, the stream gleamed, to wind away and lose itself among the hills. Above on the opposite bank stood the mighty old city of Coblenz, between the roofs of the new apartment houses with their aircraft landings atop, like a memory of ancient times, with the church towers over all. The blue sky was clear; one could see clear to the edges of the wood in the distance. A little weak sickle of moon stood on the blue horizon. There seemed to be far-away music in the air. Little shadowy points were in the

crystal-blue of the heavens. They were the army of home-coming flyers who would use the last light of day to land on the roofs of their apartment houses.

"When shall we be married?" I asked Judith, and then asked her to put in an application to be relieved from all work for three months. I can see yet, as though it were yesterday, how her eyes closed, her white face gleaming in the twilight, and hear her voice. "We ought to think everything out carefully and plan well in advance. In two or three weeks, I will be asked whether I wish to join the ranks of those who will make the journey through time or not."

It seemed to me that I was suddenly looking into the bottomless pit. "And do you want to go?" I asked. Her answer came like the voice of fate.

"This is the third time that the expedition has been sent. It is an honor to be asked."

"But, Judith," I cried, "then our marriage would last for half a year only."

"No," she said, "my dear, I belong to you, and for somewhat longer than you think. In three weeks more, the awakening and reception of the sleepers from last century will take place, and not till after that will they begin the preparation for the new expedition. It won't be till next March that our caravan will be starting out."

It seemed to me that I was sinking into a deep shaft somewhere. One after another, my father and my mother had been taken from me, and now the last person on earth to whose love I clung, would also be taken from me! For when she went under this ninety-nine year sleep, she would be lost to me. I strove against it; I cried aloud. "But, Judith, this is frightful! I will not bear it. To know that my wife is lying in a living grave, where I can nevermore see her face!"

"But I beg you — have we not learned from the first that our small personal wishes should not stand in the way of the good of mankind?" she answered. "I would be despised by everyone in the world and you also, if you tried to hold me back from my duty for personal reasons. Think for a moment—sacrifices are always demanded from the individual, and this sacrifice is as honorable to us as were those of such men as the ancient Norwegian, Fridtjof Nansen, who sought to win the secrets of the Arctic by such primitive means, to him. According to what you are saying, it was a foolish fantasy, since he was happily married and had a child. Read over once more his own account of how hard it was for him to take his farewell. He was big enough, in spite of the love he had for his wife and baby, to do his duty in the service of mankind. And if I feel in me the necessity of going forth to explain to the people of ninety-nine years hence what we were and what we thought, I must do it. But, dear, it hasn't got that far yet. Mary Sidney is also on the list of possibilities. Perhaps they will send her instead of me."

I begged her to withdraw in Mary Sidney's favor, but she asked me, "Would you do it yourself, Alf?"

And as I turned my head away, she put her arms around me and said, "I want to belong to you, Alf, to be altogether yours. That, at least, is a right they cannot take from me."

"And if you carry my child?" I asked.

She laughed. "Then it would live a hundred years, I hope, and mankind would be the richer by a new thing won from nature."

She took my face in her hands and kissed me. I said nothing. The red light was all gone from the stream; a last green flash shone in the sky. The stars were coming out, one by one. We went down from the terrace to the bank of the stream, like ten thousand, a hundred thousand, couples had before us. She leaned on me, but my heart was sad. I had looked forward so much to moments like this. I had felt like the king of the earth and I thought of the wild woods of South America and all the work that waited for me there, and how I had planned that the woman at my side should partake of all my life there as I of hers. We were to have lived in the woods among the wild

animals, and I was to make a home in this untamed world for her. And now that I really had won her for the first time, I must lose her to this phantom of a future humanity.

I spoke to my father's old lawyer.

"Hurry on your marriage," he advised, "and make it fruitful. It has never yet been that they sent an expectant mother across the perils of the ninety-nine year Somnium. There are other candidates equally good for the purpose. Do everything you can to consummate your marriage."

I thought it over from every angle and reached the conclusion that mankind would lose nothing if I held Judith back for the fate that life holds for most women.

I met her in the morning at the airport.

She promised me to do everything she could to hurry on our union and stepped into the speed-plane that was to carry her to the place where she worked, in Berlin, in a brief half-hour. Ten minutes later I took my seat in a government plane. It was one of the big machines that carried several hundred people to Madrid in a couple of hours. I had some papers to lay before the Spanish president. Experiments I had made on the high plateau of Lima were to form the basis for an effort to extend the scanty woods of Spain from the deep valleys out over her naked plains.

During the journey, I ran through the papers, making notes and collecting my material for the propositions I meant to make.

● Don Esteban Cortez was one of the greatest savants of the world. His field of work had been biology before he took over the care of the lives of the population of the whole Spanish peninsula. I had met him in Peru two years before and had learned to appreciate the extraordinary attainments of this man who seemed outwardly so dull and sleepy. He was as sparing of words as the dry earth of La Mancha, but when he dropped an idea into a discussion, it was always one that formed the basis for anything said in the future. What stirred me most was the fact that he had a decisive voice in the council that was to choose the ninety-nine-year sleepers. My old lawyer friend was a great jurist and had a profound knowledge of our planet's legal theory, but if I could waken Don Esteban's interest in my affairs, I would be certain of the result. But how should I say anything to that unapproachable personality? It was against the rules to try to influence the choice of a member of the council. But I took it as a good omen that my duty required me to see him.

While I was thinking along these lines, one of the people at the table beside me said suddenly "Madrid!" I can still see today as I saw then the greyish yellow of the countryside, the flat roofs, the towering churches. Now our airplane sank lower over the flying field. We heard the whine of the helicopter propeller and slid down slowly at the pace of a slow elevator. I felt the gentle rocking of the plane, the sensation of going down, and then we came to rest. Through the open door came the voices of the crowd. Friends and relations greeted each other. Porters in uniforms of gold and black came to take away the baggage. The captain made a short report to the commander of the airport and handed over the tape of the automatical meteorological apparatus the plane carried. Outside, the little government machine was ready and waiting to take me to Aranjuez, the summer residence of the President. Not twenty minutes later, I stood in the park where the artificial fountains leaped among ordered rows of conifers and blooming rhododendrons, while great electric fanning machines raised artificial breezes that cooled the whole place with the distribution of finely divided drops of water.

Don Esteban met me in a circle of tall oleanders in the center of which his table was placed beside a splashing fountain. Tall, mustached, with eyes that had a certain dusky light, he sat with his microphone, that connected him with his various secretaries, beside him. To the left was an indicator that showed with little red, blue,

and yellow lights which bureau was calling him. Everything about him gave an impression of comfort and confidence like that which Don Esteban himself radiated. When I appeared, he rose, extended me his hand, and spoke into the microphone. "I am not to be interrupted for the next half-hour," he said. Then he seated himself back in his chair, crossed his hands on his chest, and closed his eyes.

My remarks were somewhat along the following lines: "Every means of supporting life that the Spanish soil contains must be stirred to the utmost with every biological means we have. Therefore, we need to make an exhaustive study of the conditions, probably at least a six months' study. We must use the artificial shade-producing processes. For this purpose, I think the circular adjustable woven shade-producers are the best. When the natural growth of the new plants in such localities gives us a little natural shade, we can move the artificial shade-producers to another locality. It's the effect of too much sun in these localities that kills off the little infusoria and embryonic plants that break up the earth and prepare the way for more growth. But it is also the influence of the sun that will produce our best results in the next twenty years. Now as for the irrigation. I think that we had better go back to the old form of the artesian well, but built of concrete; this form will last for thirty years without repairs and I think that the World Parliament will be willing to vote the sum necessary for the preliminary investment, since in a generation, the new forestation will pay a rich interest on the investment."

"But will the form of well that works in Mesaoria, in Cyprus, and in Mesopotamia, where they have impenetrable soils, furnish enough moisture in our porous soil?" he interrupted.

"Your Excellency, we can render the soil impenetrable. We will make borings to six or seven meters depth and at that point broaden them out. It will give us the same result."

I have written this out very carefully so that you Atlanteans will know what kind of an existence I led in the world of those days and what I was doing, and also that you will understand how Don Esteban came to be so kind. My plan pleased him, for at the end of it, he remarked, "We have still a few minutes to ourselves. Tell me, how goes it with you? You are at the age when you ought to be thinking of a marriage, since you are one of those to whom the law permits a fruitful one."

So the question on which I had spent so much thought came up—and from him. All the certainty that I had had of winning his aid vanished, and I could only stutter, "I am in danger of losing everything in that direction."

Don Esteban shook his head. "We are not living in an age of sentimentality. When you love the woman and she will have you, what is there to hinder?"

Then I told him that Judith was one of those who was only awaiting for the awakening of the last sleepers to make the journey through time herself.

Don Esteban straightened up, and I shall never forget his first words: "It is good," he said, "that there are still people who can sacrifice themselves to the betterment of the race—and must."

I could only nod. Then he laid his hand on my shoulder and went on. "But if your marriage takes place soon, then naturally, the whole position is altered. Of course, from a biological standpoint, it is of the utmost importance to know whether a developing embryo could be maintained alive over a period of ninety-nine years. But this is an experiment that could be more easily made on animals first." He regarded me for a moment, then asked, "What is the name of your intended?"

"Judith Thyrberg."

"Ah, indeed! She stands high among the sociological choices for the expedition, although I know that Mary Sidney is her equal. Now I happen to know that Mary wishes to make nothing but science her husband and is very desirous of taking the Somnium. Therefore, my young friend, be at ease. The life of days lies before you and not the slumber of years."

And he shook my hand heartily. "Re-

member always that you can find a good friend in me."

I left with the feeling that my fate lay once more in my own hands. Nevertheless, the fear of losing Judith hung somewhere in the background. For the first time in my life, I slept badly and looked forward to the night with a feeling of dumb anxiety. We have feelings that are not altogether explicable, we men, and can often sense things in time without having any logical reasons.

CHAPTER IV

The Awakening

● "A great day for humanity!" announced all the loud speakers. At noon the seal of the subterranean chamber of the sleepers from the last century was opened. The proceeding was visible in all the televisors of the world. In white clothes, the scientists of the great institute gathered. The single chapel-like room of the hall where seventy-seven bearers of the traditions of the past slumbered, was opened; the temperature behind the thick glass walls which had so long stood at 40 degrees mounted slowly to 55; the acid-pumps labored; little machines rattled, sending their streams of electrical impulses through the chamber to rouse the nerves of the sleepers.

With astonishment, the public saw how the mummy-like forms began to move; the faces took on the colors of life. Now the doctors stepped into the room and spoke the words of waking which were always used to arouse the travelers from their hypnotic sleep—*"Vita somnium breve!"* (Life is a brief dream.) The mask-like faces began to move. Eyes sprang open. As they returned to their senses, they were treated to light, scientifically prepared foods. The women came fully to their senses first. But three hours later, the loud speakers announced sad news. Professor Antoni, the Neapolitan chemist, and Miss Saratoff, the Boston sociologist, had wakened only for a few minutes, then redescended into the eternal sleep.

Sacrifices to science! Sacrifices to humanity! Monuments would be erected to them for their courage, announced the loud-speakers.

But I who sat by Judith's side to hear the news, for we had been married the day before, was shaken by a wringing anxiety. It was the sociologist who had been the sacrifice. I glanced sidewise at Judith. She seemed to take the news quietly. "That happens every day," she said. "People die by one method or another. We are not yet masters of death."

We went into the welcoming hall. Here the seventy-five who had recovered their full strength were greeted by the people and their pictures were sent out over the whole world by the televisor. It was glorious that everyone on earth was gazing at them at the same time. The names of all of them were proclaimed abroad together with their scientific attainments and special qualities. Thereafter, the names of the candidates for the next Somnium were proclaimed. It was regarded as a great honor. The people of the earth should have the opportunity to look upon the representatives of their time and race. According to old custom, the names were announced in alphabetical order, and I noticed among the first, Flius the chemist. He was pale, and his great, dark eyes burned with a feverish light. He sat there like a man who is no more of this world. It seemed that he might well have a rendezvous with the time a hundred years hence. Shortly after came Hurst. He appeared, laughing ironically. When he saw Judith and me, he greeted us with a movement of the hand, threw his head back and closed his eyes as though he would express a blessing on us. Flius, who saw the movement, turned his head away. Now —Judith Thyrberg was called! The name struck me like a blow. She took her place by the side of Mary Sidney, a tall, dark-haired woman with a somewhat hard face. I noticed how Mary gave a consuming glance at Judith. But they spoke to each other while the operators were at work, sending out the likenesses of the candidates for the great expedition through time.

As she left the dais, I greeted Mary and remarked, "I hope that your competitor for the Somnium will not be chosen. We were married yesterday, and the papers are being submitted to the choosing council today."

Mary's face flamed. She reached a hand triumphantly toward Judith. "My congratulations!" she cried. "You can understand that I wish with all my heart that you may have a fruitful marriage." And then she breathed deeply. Yes, Don Esteban had been right; this woman had the high desire that was needed to join the company of those travelers into time.

Judith answered with a happy laugh. "The sociological traditions of our time could certainly have no better representative than you."

Mary was as red as a beet. With that navieté so often found among the most exalted of intellectuals, she answered, "I am truly delighted both with your happiness and my own." She shook hands heartily with us once more and went out, her head high. And I turned to Judith to say, "Isn't that altogether like a woman?"

The news bureau was giving out the results of the examination of the sleepers from the last century. For five years, the doctors, technical men, and savants had been preparing the questions that were to be put to them, so as to extract the maximum of information from them without fatiguing them too much. They showed us how many unexpected factors in the older time had powerfully influenced the new, and how powerfully the intellectual movements of that time had altered. The whole earth talked about it. Every citizen of the world was in some way affected. Out of the bringing together of the intellectual currents of two ages awoke a current of revivals, of helpful ideas, and the message-bearers from the past were feted as benefactors of humanity.

The tidings of all this came to us on our honeymoon. We had gone to the Balearic Islands and Judith's mother and brothers were likewise taking a holiday there. There was little difference, mentally, between my own mother and Judith's. Everything in the scientific world was disturbed over the awakened sleepers and we found that we could prolong our honeymoon with a journey to the South Sea Island, Tosa. Set in the blue sea, with its warm, equitable climate, we found everything ready—the bungalow with its electrically cooled bedroom, the noiseless motorboat for sea trips, the two little airplanes for visits to the west coast of Australia, should we wish to go. There was an old Chinese married couple for servants; they handled the electrical apparatus so carefully and silently that we were hardly aware of their presence. We lived in a paradise, loafing on the fine sand of the beach or lying under the shadow of a tall coco-palm. Three-quarters of the island remained in its natural, wild state. Judith was delighted by the gay plumage of the birds and the swift leapings of the little macacques. All poisonous plants and animals, all noxious insects, had been eliminated. Twice a year, scientific regulators visited the place to take away sick or unnecessary animals, but they did their work so carefully that the rest of the wild life was not disturbed.

● And so I lived a Robinson Crusoe-like existence with a feminine Friday, from day to day. At noon, during the siesta, and in the afternoon in the bungalow, all the resources of civilization were at our disposal. At seven in the evening, I listened to whatever my secretary in Lima had made ready for my attention. And after dinner, we sat before the white screen in a little house-theater and saw played out before our eyes, the world-events of the day. The cameras of the day had registered all its events to report them to us, and the loud speaker beside the screen gave the necessary accompaniment of sound. We could follow Don Esteban, as he laid my reforestation plan before the Spanish parliament and recommended it. With a twist of the dial, we were present at the sitting of the savants in Paris, where Dr. Outford was explaining the new disease-immunization law. With some surprise, we heard him explain that the

current general vaccination-serum, now used by everyone as a protection against all diseases, would have to be completely altered in fifty years, as new diseases appeared while old ones died out. You see, Atlanteans, that man is never quite done with the perils that surround him. We win the victory over one terror only to have new ones rise around us.

Outford explained how he himself had learned that mankind could free itself from one evil only to have a new one rise behind it. It lies in the law of life to limit life through illness and death. There will always be martyrs, like Barantoff, who inoculated himself with the new plague of humanity, the loss of the skin through a fast-acting rot, in order to study its effects on himself. To us, who loved each other, it was especially pleasing to hear Outford touch on the question of the prolongation of life. He hoped to increase the life of the individual, in full strength and intelligence, to three hundred years, and declared that the life of man ought to have a length equal to that of the parrots and elephants. Fertility should be made to begin later in life, and in this way the whole of humanity would become older and at the same time younger. And he explained: man has a certain amount of what may be called life-strength, which constitutes the capital of his existence. He can use it as he will, but cannot increase it. Either he can live with small drafts on this capital for a long time, or with large drafts for a short time. And he took the seventy-five who had come from the last century as an example. They had hardly used a drop of their life-strength during the last ninety-nine years. But the question now before the scientific world was how much of their natural lives they had used up in their ninety-nine year sleep.

This speech moved Judith to an expression of envy and ambition. "You know," she said, "I think Mary is in luck."

"And you don't care about living with me?" I asked jealously.

But she bent over me and as though to comfort me. "I have you and want nothing else," she said sweetly.

Thus we waited for the day when the council would meet under Don Esteban's presidency to choose the next group of sleepers. In order to see the sitting just as it took place, in our televisors, we had to be roused at three o'clock in the morning. We seated ourselves in the livingroom and switched on the connection with the council hall of the great institute at Aachen. In the twinkling of an eyelash, we saw Don Esteban in the president's chair and around him the assembled scientific notables. On the platform were the candidates, in the loges the statesmen and diplomats with their ladies. Sociology had the seventh place in the choosing; Judith Thyrberg's and Mary Sidney's names were mentioned. Don Esteban announced that Judith Thyrberg had entered upon a fruitful marriage with Alf Bentink, and remarked with a smile, "I daresay that we are gallant enough not to break up this young pair to send one of them to sleep for ninety-nine years. Therefore, I propose Mary Sidney for this place. If for any reason she cannot take it, an event which seems highly unlikely, I propose Judith Thyrberg-Bentink to take her place."

The proposal was unanimously adopted. Judith looked at me. "How happy Mary will be!" she said.

"Are you still playing with the idea of leaving me?" I asked.

In spite of the fact that it was all decided, there remained within me a trace of anxiety. As we returned to the dark of the tropical night, I felt my heart beat hard. We got into the boat, took a run through the breakers out into the open sea, and came back after a run of a couple of hundred miles. When the sun came over the horizon in a blaze of orange, we turned back. Behind our isle, the heavens were alight. For the moment, it seemed as though the palms were turning black. But the vision vanished as the sun rose and the archipelago lay green and quiet before us. There were other boats on the horizon, bearing other couples who, like us, were enjoying the springtime of their love in these islands of the blessed.

CHAPTER V

Unkindly Fate

● The day of that still joy when Judith realized she was to become a mother came at last. Now at last did I believe myself secure. A chapter of my life was ended; my youth now lay behind me. It had been my hope to have a child; now at last it was certain that I both could and would. Judith was as glad as I; a certain strength and sharpness of spirit that had distinguished her before disappeared in a feeling of quiet happiness. She had new eyes for the plants and animals. "I know true happiness," she said one afternoon, after our bath, "for the first time now." And a little chilled, she clung to me. I pressed the bathrobe tighter about her body. She slept in my arms and I felt the great secret of the union of two personalities in a third.

"Dearest, how late is it?" she asked as she woke and saw the starry sky.

I did not know; I had not been paying any attention to the time, and we rose to go into the house where we ate fruits, great melons and bananas, stoneless peaches and apricots. And then we drank tumblers of the sweet, light wine of the islands.

Judith was so rested by her nap that she felt a desire to see and hear something of what was going on in the world. We turned on the night news broadcast.

"How lovely!" said Judith as the picture of her own mother appeared with the news that she had received a medal of honor for her work in the care of sick children. Other pictures appeared on the screen. Then the loud-speaker proclaimed, and the words suddenly fell like lead upon my heart, "The candidate for the prolongation of the sociological traditions, Mary Sidney, was seriously injured in an elevator accident in the British Museum today. She has two or three broken ribs and a broken shoulder and possible internal injuries. Her condition is critical."

We looked at each other and forgot the words and pictures on the screen. Judith said nothing, but to me it was as though I could see the thoughts behind her clear forehead. And I spoke. "You are a mother."

She lifted her head, looked me straight in the eyes and answered, "I knew before that I would be the second choice for this place. The obligation incurred cannot be forgotten. Or would you rather have your child go through the world with the tag, 'His mother was a coward!'"

And with a touch of that fanaticism that only women can have, she went on. "Think! How many have sacrificed their lives to humanity in the past? How many men were wiped out in wars like insects? How many women have died in giving birth to children? We belong to the master race and we dare not deny the duty of offering our own sacrifices."

I said nothing more; I only took her in my arms and led her to our room. I knew full well how strict the rules of society were, and how it could inflict punishments of its own worse than those any criminal suffered. When she had gone to sleep, I left her and went down to the sea to think things out. And this is what I felt—that somewhere in my subconscious, my feeling of anxiety had warned me of this all along. It was as though I had already dreamed this and passed through it in the regions of my subconscious. I knew it was possible to speak to Don Esteban at this hour, so I went into the communication room, switched on a connection and was speaking to the secretary of my patron. Don Angualdez greeted me from the white room with a wave of the hand as my picture stood before him. "We knew you would probably call today," he said. "Don Esteban's first words were about your young wife. Will she be able to fulfill her duty as a candidate? And may I ask the question Don Esteban left for you — is your wife to become a mother?"

"She is. May I speak to Don Esteban?"

"Certainly."

Don Esteban appeared as before, sitting in the garden of his park at Aranjuez, amid the fountains. Across half the world he nodded to me in a friendly way.

"Such an affair is not foreseen in the

regulations. I admit I cannot quite see my way clear," he said. "I am of the opinion that a man can control his own actions to the limit, but has no right to interfere with the actions of others. It is therefore impossible that Mme. Judith be included among the sleepers without your permission. And," he finished, "I think that the father and mother should be consulted in such a case."

In this moment, a light broke in upon me. I perceived that Judith would never go if I really withheld her. She was too closely united to me to do that; it would destroy the beauty of a relationship that had known no cloud. And as I thought of it, I said to Don Esteban, "There would be considerable objections in the world if Judith did not take part, but I have a request that in my judgment does not seem unreasonable. I will let her join the expedition, provided I myself am permitted to join it also."

Don Esteban answered. "I must weigh the question. It is very generous and honorable of you to make the offer. But we must see whether some other candidate who has already been chosen will give you his place."

"Let me take part as an extra candidate," I begged.

"This also will be considered. I think the question is difficult enough to be laid before the people of the world in a plebiscite. And let me thank you once more for your generosity."

But I did not feel in the least generous or heroic. I was sad and down-hearted. I felt as I once had when I was in a motor-boat in the south seas and the motor failed. I wondered how I could arrange a sail that would carry me for a thousand miles without provisions or water, when happily, the motor difficulty was overcome.

I went into the bedroom. Only by the use of an opiate did I succeed in going to sleep. It was Judith's voice that wakened me in the morning. She said nothing to me of what had happened the evening before, and neither did I refer to it. I was too anxious to go back to it.

With astonishment, I remarked that we two had suddenly become the most interesting personalities in the world. Our receivers announced to us that Don Esteban had laid the proposition before the people of the planet, and that he had put it in a way to save us from ourselves. The matter was taken from our hands.

Meanwhile, Mary Sidney announced from her sick-bed that she had no thought of withdrawing; she hoped to be up and in the most excellent health again within a few months. But the spirit was stronger than the flesh. Eight days later her death was announced, and from that moment on, our fate became almost a certainty. We saw ourselves pictured in the televisors of the world; everyone on earth was concentrating the far-seeing eye of the apparatus on the little island of Tosa. As we sat in our living room, we saw our own pictures suspended above us. Before, we had bathed carelessly on the beach without bothering with bathing-suits. Now we dared do it no longer. The whole earth was peeking at our happy existence on the island. How often, as we talked together, chattering freely on the intimacies of our existence, did we suddenly stop with the thought that someone was overhearing us. And then we went into the darkened room of the bungalow, where alone we could enjoy the privacy of each other's company. But even these disappearances became a subject of public comment.

● Could the race demand this sacrifice of Judith or not? The question was debated openly. Between 18 and 20 o'clock, Greenwich time, the whole earth hung on it. In the council hall, the speakers, men and women, collected to give their opinions. Should the state demand such a sacrifice? Was not a marriage union like ours a sacred thing, on which the state had no right to intrude? Ought it to be undertaken as a scientific experiment? Some thought not, since there was no certainty as to the results. The question was posed whether a woman could be compelled even by social pressure to sacrifice herself and her child in this way. But others asked,

has the husband a superior right to the World State when the latter demands a woman for the general welfare of humanity? And ancient memories of the bloody times of the past were called into being. The husband, they declared, has as small a right to withhold the wife from the state's service as the wife had to retain a husband from going to war in the past. The answer was that this was not a question between two people alone, but of a third life also. And on this question the conscience of the people revealed itself somewhat tenderly. It seemed to be without question that a childless woman could not refuse the demand of the state for her services. But should the state demand the sacrifice of a fruitful mother, when there were plenty of women available to whom the state denied the privilege of motherhood? The men of the world were almost unanimous in their determination to maintain the freedom of the expectant mother. The women were less merciful. They did not look upon motherhood as so important a function as the men thought it, perhaps because it was more familiar to them.

Even families divided on the question. Judith's brother and uncle were opposed to breaking up a marriage so happily begun. But Judith's own mother asked her daughter to bring the sacrifice proudly. She said, "You will take your child with you into the other life and so preserve the memory of your husband." Judith's mother was, as one can see, extremely proud of the honor the election of her daughter as a candidate had brought. She had the kind of proud ambition that ran through the women of the old military families of bygone times.

Don Esteban had not yet laid my own decision before the public. To my questions, he replied that the opinion of the world on the other question must be taken first.

Judith herself talked with her girlfriends over the televisor and said that they all wished to take her place among the sleepers. Many times she said, somewhat bitterly, that it was as though these young girls envied her luck in making a fruitful marriage. In fact, the pictures of us in our tropical paradise that had been broadcast throughout the world brought upon us a good deal of envy. We were like people in a play, which is only satisfactory when the end makes the audience feel a little sad. Since we were so happy, it must be because sorrow lay before us.

Don Esteban, who spoke with me every other day, said once, "All our high civilization, all our education has not succeeded in overcoming the Pharisees. The minute we think ourselves most complete, we perceive ourselves incomplete, and particularly because the delight in the pain of others seems something that cannot be eliminated from the human heart." In spite of this, the result of the votes in the First Ring, as the governments of the world were called, stood sixty per cent against the inclusion of Judith among the sleepers.

"Sixty per cent," said Judith, "that's a good figure, but all the same nobody would ever look at us again if I stayed here."

And I had to agree with her. The cup of happiness was struck from our lips, and in the last seven weeks, the hard fact had been borne in upon us that there was no more happiness for us two upon this earth and in this time.

And when Don Esteban announced the result of the vote and congratulated us, I spoke to him with Judith beside me. "Do us this favor—let both of us escape from this humanity. If we live through it, the people of a later age will be grateful to us, but if we stay here, there is nothing but misery before us. Better death than a life that publicity has ruined."

Don Esteban laid our united petition before humanity. And now a new theme for debate was given to the world. The advisers and counter-advisers barked at each other like dogs over the bone of this new question—Should a man in so responsible a position as Alf Bentink leave his work because his wife wishes to sacrifice herself for humanity? Ought he not instead to stay on the job and live out his life?

From beginning to end, these questions were debated with every angle publicity could give to them. There were sarcastic people who compared me to the blind men who took trips in Zeppelins or giant airplanes of the old times. There was, of course, the counter argument that my participation in the expedition through time imperiled no life but my own. By a great piece of luck for me, Olafson, the candidate for the trip in forestry, had an infected leg as the result of an accident and was seriously ill. Don Esteban immediately proclaimed that I would take Olafson's place and the world gradually returned to other subjects of discussion.

The great day of the departure of the sleepers drew nearer and nearer, and with all questions as to participation settled, the world turned to the question of the event itself.

Don Esteban was kindness itself. "You have taken a burden off the shoulders of the government," he told us. "There are always enough queer ideas stirring people up without giving them new ones. There is a certain revolutionary poison in the blood of humanity that has to break out from time to time like a fever, and if it can be gotten rid of harmlessly, the race is the better for it. You have accomplished this for a generation at least, and the governments of the world owe you a debt of gratitude."

And so the noise and publicity fled from the island of Tosa. We could hardly believe that we were no longer under observation from the world. But it was true and we had a few more weeks of happiness and security before us in which we could lie arm in arm on the beach and absorb the rays of the friendly sun.

CHAPTER VI

Into the Long Sleep

● The great day opened in the scientific capital of the world at Rhine-Aachen. In this little city of the old kingdom of the Franks, French and German culture had been most fully expressed; a neutral district had been established from ancient times, and here, on the banks of the Rhine, the Temple of Humanity had been erected. Here the seventy-seven sleepers were to be sent out into the next century. There was a special ceremony connected with the event. The president of the World State and the heads of the different subgovernments were all present. The council, with Don Esteban presiding, opened the proceedings in the hall of the Temple of Humanity. The senators and lords of the earth took their places in a semi-circle in the hall, behind the scientists and savants. We, the sleepers of the future, were brought in and presented to the great people of the earth. This was the occasion on which our pictures were sent to the uttermost parts of the earth — the North Pole, South Pole, and Equator, as the heroes of a new adventure into time. Pictures were made which would be placed in every government council-building and school building of the world as a reminder to all who saw them that it was the duty of every citizen to sacrifice himself for the good of the race.

I glanced right and left along the line. Almost all the faces of my companions were known to me. Most of them were friends of mine; with some of them I had worked at scientific congresses and in laboratories. Common tastes always bring people like that together and nothing unites them like scientific labors. There was Bertrandi, who had invented the vaccination of trees, Jusselin, who had found the mathematical formula for calculating the water-pressure of the atmosphere, Birnstab, Kellog, Horn, Walter, Marini, Ewers, Brandt, Grisedach, Schmidt, Berrenger, Bruno Jahn, Winand, Amelung. Two or three I was meeting here for the first time, but their pictures I had seen before and had heard of their accomplishments. I noticed that Hurst was following the same train of thought as myself. He smiled at me and both our glances rested on Flius, who stood there deathly pale, staring into nothing.

Flius! I remembered that I had seen him at noon, in the scientific hall, sitting at a table with Maria Langeland and

Hochkofler. Poor Hochkofler was sad and almost in tears. "We came too late!" he stammered, "but at least I am glad to see you and Judith once more." Maria talked with Judith, both on the edge of weeping. And I remembered how pained the face of Flius had looked as he sat there biting his lips.

Joyfully, the seventy-five sleepers from the last hundred years greeted us, clad in their purple robes like the nobles of ancient Venice. There was a shaking of hands between those who had come and those who were to go. Then the procession moved along the gaily decorated street on the banks of the Rhine, the river of fate of all ancient Europe, while above us, the airplanes of a world whirled and dipped overhead to see our company. There was music in the air; thousands of great organs seemed to be playing, all at once. It was a glorious chorus of the jubilation and pride of mankind. On the great open terrace, there were farewells and expressed hopes, and Don Esteban stepped out under the bright sunlight to speak. His words were a warning to humanity. And when I look back on them, I marvel at how prophetically he spoke in that moment.

"We are almost too proud," he declared, "since our happiness becomes greater and greater, since we have conquered space and time, since we believe ourselves free from all cares and are even now preparing to send men from our planet to colonize another. Today we contemplate the exploits of the space-ships that have reached the moon and are delighted that we have surpassed the first achievements of the earliest voyagers into space.

"We stand before a new epoch in the history of humanity. But let us be humble. Much as we can accomplish, we cannot do everything. We have not succeeded in banishing pain and sorrow from the human heart. As samples of what we have accomplished, we send these sleepers into the time a hundred years hence. We hope for them, who have taken this duty upon themselves, that they find a happier mankind, a mankind which has banished its greatest enemy—envy."

Judith and I looked at each other. Yes, envy—that was the enemy that had not vanished from mankind.

While the applause was dying away, everyone gathered in the great arena on the banks of the Rhine. Here the youngest and strongest of the world's athletes gathered to show what they could do. Thereafter there was an exhibition of what mankind had accomplished in the graphic arts during the past hundred years, all the best statues and finest pictures. For two weeks long, there was a music contest and following this a poetic festival. But Don Esteban said to us, as we walked one evening by the side of the river, "We have made ourselves gods. What do we know of what forces may undo all this?"

Amid all this exhibition of the triumphs of humanity, the company of friends and visitors nearly suffocated our seventy-seven. Judith's mother was proud of her daughter, but her pride was not yet so great that she could retain her tears.

Judith's old uncle took the young woman in his arms as he said, "I am an old man now, and it is sad to me that I will never see you again. But I will know where you are sleeping, and whenever it is possible, I will come here to Aachen to think of you sleeping within."

The last day we should spend in the world that we knew came at last. Judith and I got away from all our friends in the cool of the morning to walk through the streets of the old city together. Some inner desire moved us to step into the old cathedral in whose vaults lay the bones of Charlemagne. We stood beneath the roof of the old chapel that had been erected by a Saracen architect from the court of Haroun al Raschid at the behest of the great emperor of the west. Under the high-arched roof, we sensed the union of northern and Mediterranean culture. Something in it moved us deeply. And both of us felt the same, the age-old longing of mankind to unite itself in a single great harmony. But we felt that the great-

er would always grow greater, the lesser less, and the old dream of men to unite lords and masters in a single equality was an impossible chimera.

● At the door of the cathedral, a young man almost ran into us. He was blond and loose in his movements and looked at us from blue, other-worldly eyes. Without ceremony, he spoke to Judith. "I watched you more than all the rest of the seventy-seven," he said. "You are brave to carry another life across the ages. You are a mouth to speak to the children of another world."

When I glanced at him questioningly, he said, "I am Ferryman, the leader across the ages, sent here to steer the boat of your fate across the seas of the future. Mankind is ripe and over-ripe, ready for ruin. The understanding, the intellect — call it what you will—has swallowed the spirit. We live for things and not for the inner feelings. Oh you, I bid you, rouse again the sense of life that has been enslaved through labor! Ask yourself, wherefore do I labor, wherefore do I toil? —so that you may sleep more comfortably, eat better, have a pleasant place in which to live. Where are thy dreams, where are thy thoughts? They come from books, from machines, predigested like preserves and without any necessity that you rouse yourself to struggle for them. A child who cries that the stick he rides is a horse has more than you, you who can fly to the stars.

"But beware, you, that the stars do not come and take their revenge on an earth become too proud.

"My blessing on your head. The leader greets you, the leader who has shown you life and submission."

And with these words, he turned away. Judith turned to me wonderingly. "Who was that?" she asked.

I remembered. "Ferryman. He is the prophet of a new religion. We seem to have moved him and he followed us here. Madmen always follow the trail of great events."

Tired with all the festivities, interviews, preparations, and proclamations, Judith and I retired for an early rest. We woke early in the morning to find that a bird had somehow gotten into our room and was trying to find his way out. When I opened the window, he made seven circles before he found the exit and vanished into the dawn. Was not this bird an avatar of ourselves, taken prisoners in the net of headlines, curiosity, law, and paragraphs of the rest of mankind? But there was a way out; the bird found the blue sky of heaven once more. Oh, if Judith and I were but birds and could thus escape out into a free, open world!

How foolish it all seemed. This was the last morning that she would rest by my side. She lay there quietly, her head buried in the pillow. Her features were pure and clean, seeming to hold in themselves the whole secret of the coming life. They had grown somehow more delicate and paler. And there lay the Future, lay the child! This highest good of mankind, the mother and the child, was to be thrown into the melting pot "for the good of humanity." What was this humanity, what was it worth against the claims of the trinity united here in this room? And yet to the people of the earth, it meant everything. This was not wisdom; this was mere education, fashion, and I thought back on the bad old days when men had to sacrifice everything in the wars.

But were not these wars done for all time? In spite of all precautionary measures, brave men still perished in laboratories and scientific works. In the handling of the great solar mirrors at the Equator, where solar energy was gathered and sent out all over the earth, almost five hundred men were killed every year, according to statistics. Why?—for humanity! Yes, it could not be eliminated from the world, somehow. There would always be those who could command and those who must obey. And there would always be an army of men at battle with the forces of nature, which were never quite vanquished, and every day men would die for humanity.

Judith awoke. She reached out her arms

to me and said, "Lie still. Let's pretend we are not yet awake. Our last day will begin soon enough. Two hours more won't make any difference."

Two hours! I realized that this was really our farewell to this life, this happiness that had lasted for so short a time and had been so embittered for us by publicity—by the rest of mankind that had laid its orders upon us, cold, pitiless and unmoved, like some god of the olden times that demanded its sacrifice of blood.

So we held each other in our arms, looked into each other's eyes and kissed each other, without words.

"Now that the day is here at last, I cannot believe it," said Judith finally.

Then we heard somewhere in the depths of the building a loud-speaker calling. The children were being called for the parade. They were to have one more chance to look at the heroes of humanity. So we got up, and everything went by like a series of pictures in some kaleidoscope. President Bertram Mastermann, the ruler of the British Commonwealth of Nations, spoke the words of farewell and shook our hands. Then we marched into the great building of the sleepers while a gay music filled the air. Once more we looked on the old cathedral, the fields and sky, the stream running away through its little hills into the distance, before we went down under the earth. The music was quieter, and from organs turned to harps and cellos, violins and clarinets. Hand in hand with Judith, I had gone down. It seemed to me almost as though I saw her spirit freed from the body, and the others also, swimming free—in the great, gloomy, grey-silver room. Pale and other-worldly, the head of Flius stared out from the rest. Each of us was taken to his special sleep-grotto and once more told where the instruments and tools were that we were to take with us on our journey through a century. Then we met once more in the center of the hall, seated ourselves at a stone table and drank the intoxicating liquor that, according to the rules, was the last we should taste for a hundred years. It was a chemical liquid designed to hold the inner metabolism of the body steady.

"To super-domestication!" cried Hurst in the echoing room. But his phrase sounded senseless; the occasion was too solemn. Nobody answered, and Hurst shook his head resignedly.

While we were still sitting at the table, the doctors came and gave us the injections that were needed. I had foreseen all this; it was as though I were passing through a familiar scene. My thoughts rested on Judith alone; I looked at her only. Her hand rested beneath mine, and I clung to it; I could not let her go.

The leading doctor came to us and said, "Time to go now."

And as Judith rose, she kissed me once on the forehead, once on the mouth, and then ran toward her couch. I saw how heavy her limbs seemed as she lay down.

Now we were bandaged. I noted the faint odor of balsam and thought of the Egyptian mummies. Once more I heard the ethereal music that had accompanied us. Above me there seemed to be a swimming sea of crystal, and I heard the words:

"You are to sleep well, sleep deep. And you will wake, when you hear the words—note well these words—*'Vita somnium breve!'*"

And it was as though a chord of organ music had pronounced the ancient words, *"Vita somnium breve!"*

I felt tired and the thought that life is indeed a brief sleep passed through my numbing brain.

Then it was as though dark wings rushed in from all sides and the hall seemed to widen out. Was it not the vault of heaven itself, set with little silver stars?

The clock of life stood still.

CHAPTER VII

"Vita Somnium Breve!"

● Red clouds! No, a red sky overhead—a red as though made of wool—voices far away as though heard through thick curtains. And then suddenly the sky tore apart and a line of clear golden letters, as though built up of lightning flashes, stood

across it. I heard it — *"Vita somnium breve!"* Everything was moving around as with the rush of mighty birds. The red was slowly withdrawn. It was as though it sank away from my head. A streak of light struck me in the eyes, the darkness opened and out of the background, pictures stepped forth. There was space. The vaulting overhead was that of the room of the sleepers. There in front of me were men. They stood in a circle of light against the back-wall as though praying.

"Vita somnium breve!" came the words of awakening again.

Over me was bowed an old face, white-bearded like those of dwarfs in the children's books, for I could never remember having seen a white beard on a living man. The men of our times were beardless. I looked him in the eyes, which were dark with shadows. I did not quite understand yet, heard words in a language that was foreign to me, and yet somehow familiar, sounding like a mixture of Danish and English. I managed to make out a sentence —"Thither lifs"—This one is alive. It came to my senses finally that yes, I was alive; I felt hands on my naked breast and an odor in my nostrils, a sharp odor reminiscent of cloves. I felt ill. It was as though a hot hand were lying on my throat squeezing out all the veins and tubes. My arms were heavy as with great weights and my feet felt as though they were nailed to a board. My back was stiff.

"Torn," I heard. The lips of the white-beard had moved. It was a deep, manly voice, "Torn!" And I felt that my body was turned over like some log, and understood the word "törn." Then something more that I did not understand was ordered and my feet were set in hot water. The sensation went all through me like a painful cramp, but there followed a sense of well-being. Thoughts began to course through my brain. I was really awake—*Vita somnium breve!*—the words of waking had succeeded in rousing me and had worked on my subconscious. But the music that I remembered, where was it? More thoughts rushed in. Our awakening is a festival for humanity, the greatest for a hundred years. Our festival—Judith's festival! Yes, Judith's, for she was the heroine of we seventy-seven sleepers. And with an effort, I freed my hands from the detaining bandages, tearing them here and there and moving my shoulders forward. "Judith! Where is Judith?" I cried. Then I felt a sudden spasm of weakness. It was as though all my blood went rushing downward somewhere; I felt it, like a waterfall. But I held my eyes painfully open and saw that three men were busy at the long table in the center of the hall where everything stood ready for the awakening. They were heating water over a flame. Yes, a flame—a blue flame. That was peculiar. I had never seen this kind of fire in the laboratories, even when I was studying there, for the use of open flames had long since been banished from the earth. Only the savants who needed them sometimes in checking old experiments were licensed to use open flames.

One of the men at the table, a blond-bearded man, turned toward me and said in a rude and choppy imitation of my own tongue, "Be quiet, Master, you are awake. More I cannot first say. You are awake and have live. And you are wonder for us."

I sank back in upon myself, closed my eyes and lay back. What was this man saying? "You are awake and have live. You are wonder for us." Wonder! No, this must be a dream, a mad dream, born of anxiety. Or had I been somehow awakened before the proper time? Was I—had something broken in upon us?

And then I remembered that there had been provided means of safety for us in case of accident. If something happened that woke us from our sleep, we were to press the levers to left and right of the couches that set loud speakers in operation and gave warning outside the vaults.

I reached to my right and felt the lever, but I could not move it. I threw my whole strength upon it; a bell began to ring at the top of the vault in deep tones and I heard how the men about me moved hurriedly, understood the words, "What's happening? What does it mean?" And

from the distance there came words, "The chief! Where's the chief?"

I opened my eyes wide. The white-beard was bending over me again, pushing me aside and taking my hand from the lever. The bell stopped ringing and the white-beard said, "He was giving a signal, calling for help. He seems scared. Naturally, he thought it was different. Naturally."

But I did not understand. Would this mad dream never end? Anxiety rose up in me and I cried aloud, "Where am I? Where is Judith?"

The man with the blond beard came to my bedside. He was tall and looked down upon me out of strong, blue eyes. "Judith? Do you mean the woman with the number 15 who lies in the next cubicle?"

"My wife!" I cried.

"Quiet!" said the blond-beard. "It is likely that she is alive also."

And there came a voice from somewhere behind whose foreign-sounding words I managed to make out. "The woman in number 15 is awake. She is asking for her husband, Alf Bentink, in cubicle thirteen."

"Judith, we are alive!" I cried out, but the effort was too much and I sank back. Around me whirled purple clouds.

Slowly the darkness yielded again. In spite of my weakness, I realized that I was awake and alive and Judith also. I felt my heart beat more comfortably. Someone came with food and drink to quench the thirst that gripped me. And for the first time, I noticed how my teeth were opened and something forced between them through a small tube. The taste reminded me of tomatoes, which I had liked so much when I was in Mallorca with my mother.

Ah, yes, my parents! They had been dead now for a hundred years. But Judith was alive and she had been wakened through my efforts and would stay awake to see me. For love is the loudest of loudspeakers. How glad I would be to see her. But how long would it be before we could be with each other? Even now the televisors of a world must be proclaiming to all the earth that the great work of reawakening the sleepers had once more succeeded. And there would be an examination. We would be examined by doctors and sent to a health resort, so that we could recover our strength. No one would see much of us till they were sure that the stream of life once more flowed through us in all its strength. And then we must give answer to the questions they would put to us, to show how much the world had changed in a century. But they must be gentle with us. Judith was with a child! Would the child live? At the thought I called again, "Is Judith's child all right?"

The grey-beard bent over me again and asked, "Did you bring a child with you in the sleep?"

I answered, "No, but my wife Judith was about to give birth."

● The face of the greybeard took on an expression of gravity. He turned and said something about what I had told him. I understood that he himself was going to see to it. He seemed to think the inquiry a most weighty matter and I gathered that he did not have too much confidence in the other doctors present. The feeling of anxiety rose in me again; I felt as though a nail were being driven into every one of my ribs. I gasped for breath and felt a shooting pain in the arm, then noticed that someone had given me an injection. In a moment I felt better and rested between sleep and waking, without quite knowing what was going on, filled with a feeling as though I were floating amid white clouds.

Again I was given refreshments. But when I closed my eyes, pictures swam before the lids. It was as though I were wandering alone along the beach of the South Sea Island, looking into the distance and seeing there white, rolling clouds, beneath them the bluest of blues through which struck a golden light. Then once more the face of the old man swam out of my dream, reminding me of the masterpieces by the painters of the Renaissance, perhaps some good monk from the hand of Fra Angelico.

And the good monk had tears in his eyes. "Wonderful," he said. "Wonderful. The child is alive. We ought to pray. The child lives and has been brought safe across three hundred years."

Around everything was still. Three hundred years! The words shook me. And I asked, with a groan, "Three hundred? What does it all mean? We thought it was for a hundred."

The old man bent over me again and said quietly, "It would be too much for you in your present state to tell you all about it now. You must learn it little by little. We expect much from you, you people from the great, strong ages. But now you must do nothing. The earth has changed a good deal since the days when you went to sleep."

I said only, *"Vita somnium breve,"* and the others around the room repeated it like a litany. *"Vita somnium breve."*

The old man turned away with a sigh. I noticed that he was weeping.

Once more I fell back into a doze and once more in my fevered dream bade farewell to the people who were now long since dead. I saw the serious, keen face of Don Esteban and heard once more the cool voice of our teacher, Professor Sundermark, who had taught us unforgettably the whole ritual of the awakening with hypnotic suggestion: "Breathe deeply!" he told us, "breathe deeply and give yourself over entirely to the spirit of the music that will transport you from the old world into the new." But where was this music that should have taken us harmoniously over into the new period of time? I must have awakened somehow altered, and at the thought, a fear came slowly over me. Three hundred years, these people had said to me! Was it possible that the earth had forgotten to wake its sleepers, forgotten the heroes of humanity?

Wait for your strength to gather, was one of the last things they had told us.

But Judith? What was happening to Judith? She was alive and the child within her. That was all right; they had told me so. Yes, and it was my grip for the lever at the bedside that had wakened her. No, what was the use of thinking about that? Judith was alive, the child also. I must gather my strength, and then help myself, get on my own feet. While I was thus trying to remember, I fell asleep once more in a different kind of sleep, a sleep which I felt would bring me strength and health.

My last conscious thought was a prayer that Judith might also sleep, like I.

With a clear head, but heavy limbs, I woke for the second time, feeling as I used to sometimes when after a night of hard labor I had gone to bed late to wake too early in the morning.

"At last! Alf!" I heard a voice near me and saw at my right another bed. An ivory-white face rose from the cushions, surrounded by red-blond hair.

"Judith!"

"Alf!" And she reached her hand out to me. I felt it tremble in my own, heard her words that rang oddly in the vaulted room. "When I knew you were all right, I told them I didn't want to be alone any more and asked them to let me rest beside you."

"Who are they?"

"When I woke, I had a feeling that all was lost and fell back into a death-sleep that only the bell woke me from. Then the old doctor with the white beard came. He told me that you were alive. That made me live, me and the child. The thought of you brought us both back."

"I nearly died of anxiety about you," I answered. "But what kind of a world is this we are pitched into? They are talking about three hundred years of sleep. Did they forget us? How could it happen? And where are all the rest?"

"Something terrible must have happened to the world. They are very silent about it. But we two and the child are alive at least. That's enough. Give me your hand. Let's rest."

A sense of peace descended on me with these words. Judith was beside me, Judith and the child.

I closed my eyes and heard steps approaching my bed, felt that something was

being done to me, but did not understand clearly just what.

At last my sense of heaviness disappeared. I looked around. The vaulted room was half dark. Judith was asleep. A sense of dull anxiety came over me. Were we lost? I raised myself up and shivered. A soft leather-like robe lay by my side. I put it on and stood up. My feet were heavy, dragged me to my knees as though I were walking through soft mud. Two men came to me. They were the doctor and the man with the blond beard. The blond spoke. "You are the strongest," he said. "The two others we managed to wake, beside your wife, are giving us a good deal of trouble. Which of you was the chief?"

"Two?" I asked, and felt another attack of weakness, "Two?"

Arms supported me. I stammered, "There were seventy-seven of us. How could it happen that all of the rest died?"

"Quiet!" said the white-beard. "It's all a mess that can't be explained now. When we dug in here, we didn't in the least expect to find living men. We were looking for books, tables, and instruments."

"Who are the other two who are alive?" I asked.

"We do not know," said the blond.

"Take me to them," I demanded.

They supported me in their arms and led me to where two beds stood in a single room. Men stepped back and looked at me. I bent over the two heads and knew them for Hurst and Flius. I saw from the grey hue of their faces that it was not well with them and remembered that all the materials necessary for bringing such doubtful cases were at the right of the room. I pressed the button. The box leaped out and then a new wave of weakness overcame me.

CHAPTER VIII

The Terror from Druso

● When I came to myself again, it was with a mind altogether clear. Judith sat beside me caring for me. I looked around and saw that the white-bearded doctor was still bending over me. "The other two have you to thank for their lives," he told me. "We found the full directions there and were able to save both of them as well as to strengthen you and the lady."

"If you wish to heal me altogether," I said, "tell me what has happened. Have we really slept three hundred years?"

"The number is believed to be accurate; we can reckon it up later and make certain," said the old man.

"And what has happened to cause that?"

"Let me explain quietly. What has happened is as incredible for you as it was for us to find you here. I am Thankmar, the chieftain who was sent out to discover this scientific city of our forefathers and to find ont what we could in it. We found this temple and opened the chambers. We found the directions, but it was too late when we came upon them to go about opening the place systematically and we had already destroyed the cooling system, which, by the way, was a true marvel of the technical skill of your age. As luck would have it, our reader discovered at the last moment what an error we had committed. If we had been careful, we might have saved some of the others, but at least, we succeeded in bringing you four back to life. Now we will do our best to make good our error. And you will help us to find what we have been looking for half-way around the world—help from the science of our forefathers. Perhaps we can even set the earth free from the powers of the other star with your help."

"Help?" asked Judith.

"Against the other star?" I questioned.

Thankmar went on again. "You are strong enough now to understand the worst and the greatest. Ten years after you were put to sleep, the earth was conquered, captured like a merchant ship by the pirates of the old days. The robber-star Druso got the best of us and made all humanity prisoners except a little band who held out at Boothia Felix in the electrical city at the magnetic pole. Around

this little band gathered all those who would not submit, knowing that only with the mighty power-waves that emanate from the magnetic poles, and only in their immediate neighborhood, was there a chance of free life. Nobody succeeded in getting to the south magnetic pole, for all the means of travel were destroyed. On all the rest of the earth, mankind, helpless and defenseless, passed under the yoke of the conquerors, for they did not know how to live without machines and electrical power. The conquerors did not think the scanty remnant in the ice of the north worth bothering about, and moreover, they are not well able to bear cold. The fate of the rest of the earth was hard. It became a kind of radiator to furnish heat for the robber-star and mankind itself a domestic animal of the Drusonians.

"A new race of men grew up that knew nothing of the past, or even the hardness of their fate, so easily is memory wiped out when there is no leisure for remembrance and all one's strength is needed to live through the present day. They look upon the Drusonians as gods to which they must make sacrifices to expiate their sins against the Spirit of Life, as they call it. It will astonish you to learn that the planet is inhabited by men who hate machines and, under the religious pressure of the Drusonians, hold everything that has to do with science as evil enchantments. These people have gone back to the civilization of the bronze age and have no connection with Boothia Felix. They have only certain dark legends that in the ice of the north live black dwarfs who do the devil's work."

I heard this tale like something out of an old book; it did not seem possible that it was anything that could affect me. I closed my eyes and thought back, but I could not orient myself to this world which had suddenly opened before us. I seemed to be swinging between two worlds, and I felt a sense of weariness and hopeless struggle.

But Judith arose. She gave me a glance such as I had never seen before, and said simply, "Let us see the others." The feeling of strength of mother-love that streamed out from her was so strong that it lifted me up almost bodily.

We found both of them fully awake, but weak, like swimmers who lie on the strand and cannot collect the strength to go farther inland, Judith stepped to them and did what women have done to help weakened men since the beginning of time; that is, she held her hand on their foreheads and spoke to them. It was less what she said than the tone of her voice that helped them, the tone that awoke the memories of their childhood. Judith was a personification of motherhood, Isis, the queen of the stars, Maria, from heaven.

Both of them seemed to gather strength. Hurst spoke first.

"And the others?"

To quiet him, Judith said, "You must get strong first." Clear-sighted Hurst understood everything at once. He straightened up with such energy that it seemed as though he would leap from his bed, but he sank back again, murmuring only, "All the others?"

And I could not avoid the tears that came into my eyes; I could only nod.

"All of them," said Hurst again.

Flius opened his eyes and sighed. "Why did I have to wake, why wasn't it someone in my place, someone who really longed for it?"

Hurst drew down the corner of his mouth in his old ironical smile. As solemnly as a professor in a lecture hall, he announced, "My sympathetic organs are damaged. Let them give me a current from machine C 418."

"What do you want?" I asked.

"C 418!" repeated Hurst, and suddenly twitched together as though in a convulsion.

But Judith called out, "He means the compartment where the apparatus is to be found!"

With the help of the plan that was incised into the compartment wall, we found the place quickly enough. The blond man took the machine from its case and handled it, as joyous as a child.

"What a beautiful piece of work!" But Thankmar took it from him and hurried to Hurst's bedside, asking, "What shall I do with it?"

"Press the red knob—set one end on the—navel—the other on the loins—and turn it on," he gasped.

The apparatus worked as quietly as though it had just come from the factory. Hurst's cramps and twitching ceased; he sat up and the old ironic smile played around his lips. "As well as I can understand, Madame Judith," he said, "we have come to in a wild age. That is pleasant for me, who have always dreamed of adventures. I, who never thought it possible, will be able to live as a man of the bronze age! Hu!" Then he turned toward Flius. "Give him a little current from the machine too, and make up for his organs of sympathy, which don't exist."

● Now that we were grown stronger, all of us longed to see the sun, the light. Thankmar warned us, "You must be careful. We men from Boothia Felix have come here as northern merchants and have rented a little piece of ground from the river-dwellers as a garden. We were not prepared to find anyone living here and we must be careful not to let the river-people know about it. They must not know there are more of us than there were at first. Four of us will stay hidden and you four take our places. Everything that happens here they must tell to the Oracle, and if the Oracle knows that there has been a change of any kind, everyone would be brought to the temple and then we would be lost, for the Drusonians see through everything."

Then for the first time we realized the weight of the rule that lay on the earth. "It's a disgrace," Hurst said, but Flius only shook his head sadly.

We put on the heavy clothes that our discoverers wore. Toward sundown, when the banks of the Rhine were empty, we stepped out into the garden. Judith, Hurst, Thankmar, and I took our places at a table. Flius was in a hammock. We gazed in astonishment at a strangely altered world. We were sitting in an almost feral garden among alders and plane-trees whose leaves rustled in the wind. Clearly reflecting the sunset, the old river ran away through the hills and all around; the horizon was blood red. We asked, "Is everything gone of this place that was once the scientific capital of the earth?"

And Judith added, "What has become of Charlemagne's cathedral in old Aachen?"

Thankmar replied, "It houses our enemy, the Oracle."

We looked at each other. Above, on the farther bank, we noticed a jerry-built wooden pier, with a couple of dugouts attached to it, with a few poor thatched huts clustering around.

What had become of the great range of buildings that had lined the Rhine from the Bodensee to the ocean? We thought back to that afternoon in Coblenz when the air was filled with the buzz of the homing airplanes. Above us now there were only a few great birds, turning circles as they sought for their prey in the surrounding wild and wooded plains. The earth around us was fragrant with herbs and fertility and the breeze from the north felt refreshing.

Thankmar ordered a meal to be set out. "You are strong enough now," he said, "to eat like the rest of us."

The meal consisted of roasted meats, almost bloody, such as we had read of in old books, and vegetables in their natural forms. Hurst shook his head. "Who would have thought it!" said he. "We expected to go forward a hundred years and have stepped backward a thousand."

Thankmar pointed out over the stream. "Go down there and mix with the people of the country and see how the earth has changed. I think there will still be surprises for you."

Hurst produced a pair of field glasses. "Incredible! They are barefoot and clad in skins and have decorations wound into their hair, which is not cut."

Judith spoke. "I remember something old Tudor of Yale University said once, over which we all laughed enormously. He

was skeptical about the value of our efforts to conquer space and enter relations with other planets. What is there to guarantee to us, he said, that the inhabitants of another planet would not regard us as a good subject for conquest? When men have outgrown war they are not far from the time when the law of nature will replace war with something else and some other form of life will devour them."

After the meal, Thankmar produced a piece of apparatus which I had never seen before and did not quite understand. He put a brown, leaf-like mass in a kind of vessel, set it in a support on which there was a little tube, and kindled a flame beneath so that the leafy mass was lighted. Then he began to suck on the tube and blew out clouds of smoke.

"Ah," cried Judith, "this is extremely interesting from the sociological point of view. We managed to overcome the desire for nicotine after great efforts in our day. Our hygienists established that it worked a great deal of damage to the nerve system and had it forbidden to everyone. And now it has returned to popularity."

Thankmar nodded. "I enjoy it and I am an old man, seventy years old and still healthy. Moreover, I would often be very uncomfortable in these wilds if I could not smoke. Everyone smokes here, even the women and children."

"We have indeed gone back a thousand years," said Hurst.

"You must tell us a good deal more of what has happened; we don't yet know the details," said Judith.

Thankmar began. "It is only with gaps that I am able to explain to you what has happened, since most of the knowledge of the past which has come down to our days is strictly guarded by the council of our people. The rule is that science ought to be used to preserve and improve the race and not to linger on the past glories of our forefathers. And not only this, but the catastrophe itself which has shaken mankind to its foundations has produced many gaps that can never be filled. No alteration that ever took place on earth was so terrible for mankind as the conquest of the planet by the star Druso. I will try to give you a picture of it; three years after you were placed under your sleep, a movement began on the earth and grew almost to the level of fanaticism. Mankind revolted against the limitation of fertility. There was a fierce wave of resentment against the laws regulating births. A woman named Wallforth was one of the leaders, and her motto was 'Save human life.' Out of this movement was born what was called planetary imperialism.

" 'Why must mankind limit itself to the earth?' demanded Samuel Ogden. 'Let us reach beyond these borders out into space!' Philosophers appeared who developed and extended the doctrines of the old German thinker, N i e t z s c h e. They preached the freeing of mankind from the life of the animals and giving him new goals and new objects to strive for. They declared that it was better to die in the struggle than to bear any longer the limitations imposed on family life."

"But how is it possible," said Judith, "I don't understand. In our age, the life of every individual was cared for. We called it human gardening."

"True enough," answered Thankmar, "but you know the way gardens work? If it is given too much manure, even though everything is favorable to the growth of the plants, certain wild weeds enter in spite of the gardener. And if he does not watch it every second, in a few days the weeds are stronger than the plants. In the same way, wild, spontaneous, noxious shoots came into humanity."

● Hurst cut in. "You must not forget, Judith, that in our time, the paternalism of the government was really quite overbearing, considered objectively. We leaders felt our indispensability and let the others feel it. The arrangement of things was all to our advantage."

"But," protested Judith, "it has always been like that and always will be. The difference between the rulers and the ruled is ineradicable. Every epoch in the

history of mankind shows that, even that one in which democracy was a favorite form of political organization."

Thankmar nodded. "And there will always be those to protest against any form of social organization, though today there is little protest in our people, because they have a great object before them—that is, to rid the earth of those Druso-gods who have stolen our world from us. But, to return, there was in that time a great movement in humanity to reach beyond the boundaries of the planet. Through centuries, the people of the earth had been satisfied to probe the mysteries of their own home. Now all attention was fixed on space and the whole technical effort of mankind was directed to its conquest . . . . The earth must have bred some wonderful technical skill in those days."

"It did in our time," said Hurst. "I remember very well that much of our research work was directed toward the solution of the problem of interplanetary travel. The moon had been circled several times and seven expeditions in spaceships had been sent to Mars. One of them succeeded in reaching the planet and sending back information, but then, like the rest, it perished."

Thankmar looked at him wonderingly. "How great were the men of those days!" he said. "I must tell my people what they accomplished. We can do it again and make ourselves free!"

Then he went on with his story: "The Wallforth movement resulted in some of the scientists beginning to doubt the value of the limitation of population. The teachings of Reichberg on the self-improvement of life made a great impression. He declared that the important thing was not a given set of eugenical characteristics, but the individual will of life. Men who were permitted fertility by every examination board on earth, men of the highest physical and mental attainments, were unfruitful through something w i t h i n themselves. And when one considers that in the past ages even degenerates propagated, it becomes evident that this will to life is the most valuable characteristic that nature has to impart, and the one it is most important to preserve.

"But the statesmen clung to their laws. Only one exception was admitted—if it became possible to colonize another planet, this planet should be organized and colonized along the lines laid down in Reichberg's theory, and all the partakers of the Wallforth movement should be allowed to go there and work out their destiny as they would.

"Many space expeditions were prepared and equipped. The German, Friedrich Kerkner, reached Mars in a space-ship and succeeded in returning safely. Up to now, we have held this tale to be a saga, with some indiscoverable basis of fact. But what you tell me makes it certain that the old legend was true. Then a Dr. Mannhardt invented a new type of space-ship of a hitherto unheard-of efficiency. He circled the moon with it two or three times and finally commanded an expedition to one of the more lately discovered outer planets which, in spite of its distance, was suitable for habitation according to the astronomers of those days. But the Mannhardt expedition took place just at the critical moment in the history of the earth, and we do not know exactly what took place. As well as we can tell from the records preserved at Boothia Felix, messages continued to come from Mannhardt and finally it was discovered that they were coming from a small celestial body that was approaching the earth like a great space-ship. Something remarkable was expected. The messages from Mannhardt continued, declaring that one of the greatest steps forward in the history of humanity had been taken. The inhabitants of this planet had so mastered their dwelling place that they were able to control its course in space. The genius of men and Drusonians would be united to bring about a new epoch.

"People on earth must have awaited the arrival of the planet with feverish expectation. In the same way, the Mexicans must have awaited the arrival of the kindly white gods from beyond the sea, in the old days of the discovery of America."

Judith interrupted. "I can see what was happening on earth well enough. In our time, the leading movements were for intellectual and spiritual betterment. We wished to develop ourselves, become better, more intelligent. The meeting with another race of intelligent beings must have held the most wonderful promise for the people of our time."

"Of course," continued Thankmar, "the Drusonians had other ideas. When the terrible day when they brought their power into the open came, all the electrical plants of the earth suddenly failed and, in a moment, life stood still. The sky had a greenish tinge and the temperature sank twenty degrees. With the electricity all gone, there was no means of procuring heat. In sore distress, mankind remembered the stoves, flames, and fires of another day, which no one any longer knew how to handle. In their ignorance, great fires broke out which were the beginning of still greater revolutions. Wild prophets rose and proclaimed that it was God's punishment on an impious generation which had grown too proud, too arrogant, and must learn humility through the perils of old time. Frantically, the few leaders, particularly the space-explorers and astronomers, sought to bring them back to reason. But they lost control when Mannhardt's words came from the skies. 'Yield to your fate! You are powerless. Learn that the earth has won new gods and serve them!'

"No one ever knew whether this was Mannhardt's own voice or that of some Drusonian imitation of him. In any case, this proclamation served to bring chaos into the collapsing fabric of civilization.

"Only a certain small group of intellectuals had succeeded in communicating with each other by means of heliographs and similar primitive devices. It was the electricians and physicists, above all the engineers and workers in the great electric station at the magnetic pole, who decided to save at least the station at Boothia Felix. And gradually, all those who kept their senses and spirits up gathered around this place in the northern ice.

"After nine months, the electricity returned to the earth and with it came salvation for the folk in the ice-bound land there. The rest of the earth fell entirely under the power of the robber-star. The Drusonians had counted exactly on the effects the withdrawal of electricity and heat would have on civilization. The few in the north remained hidden in the underground station, hearing over them from time to time the buzzing of the Drusonian space-ships, which were inspecting the world from above. Either they did not see the men of Boothia Felix or took them for animals, clad in their fur parkas. They were not discovered. Perhaps, all in all, our community numbered twenty thousand people.

"But we had a considerable quantity of machines, apparatus, and chemicals and waxed in numbers with every passing month. Gradually others came to join us, only the best spirits, for the others had given in to the frightful pressure. And Arko, the chief of the station, established strict laws for the protection and continuation of our lives."

"But what became of the rest of humanity?" I asked.

"The rest of humanity," answered Thankmar, "were frightened and humble before their new gods. Some became prophets and priestesses, compelled to it by the magical powers of the Drusonians. They preached the destruction of all science, the devilishness of all works of the intellect. All books were burned; all records, apparatus were destroyed, the laboratories broken down. 'Back to nature,' cried the priests. Soon the planet took on its aspect of the savage ages, when every man's hand was against the other's and the conquerors were looked upon by mankind as gods."

CHAPTER IX

Enslaved Humanity

● Flius half rose from his hammock and asked in a troubled voice, "Are the inhabitants of Druso anything like men?"

"We are not altogether clear what kind of beings they are, but we think that they

are most nearly like the insects of this earth." he replied. "The fact that ants are not allowed to be killed also points in that direction, as well as that the men entering the Oracles must take ants with them. In Atlanta, our city, we have systematically collected all the information bearing on the Drusonians. We have filled the earth with our spy service in order to obtain this information. A special institute has been established to correlate the data thus secured and to draw lessons from it. We have suffered very little from treason. In a few cases we have established the fact that the spies have gone mad, and in such cases their information was discarded. A few of our spies have succeeded, through their cleverness and presence of mind, in becoming priests in the Oracles and are directly in the Drusonian service. Through them we know that these beings, which live in crystal cylinders, have nothing of the man-like in their appearance, but a certain slight resemblance to the flying beetles. The theory is that these beings in the crystal cylinders are mostly Drusonians themselves, but we have not succeeded in getting one of these cylinders to investigate. Orders are given from the cylinders in a thundering voice that is most unman-like, but rather like a machine production.

"Some of our engineers and workers have also succeeded in finding places in the space-ships of the Drusonians. Through them we know how the space-ships are propelled. Still others have reached Druso itself and have succeeded in sending us descriptions of the planet and its inhabitants. There exist more beings there of ant-like appearance, with six legs, about ten inches high and about three and a half feet long. But we do not know what is the connection between these and the beetle-like beings of the crystal cylinders. They may be quite different races of insects. We know that the people on Druso live much more comfortably than those here; everything is peaceful there. But as to what use the Drusonians make of the men on their planet, we are uncertain. The power of the Drusonians is exerted through magico-hypnotic influences. They play the part of gods. One of our researchers about fifty years ago announced the theory that the Drusonians must have arrived at a high degree of degeneracy. In any case, they have not succeeded in habituating themselves to cold, and for this reason, Atlanta, the last refuge of free humanity, is still safe."

"Can I get a look at this Druso?" inquired Hurst.

"When the moon sets," answered Thankmar, "you can see the robber planet in these latitudes. It is red and at about half the distance of the moon."

"Very interesting," mused Hurst. "There are a good many deductions to be drawn from that in a mathematical way."

"Ah, we are already following up that line," said Thankmar. "You must come with us to our laboratory. You will be able to help us a good deal."

Judith cut in. "But why should Druso wish to conquer the earth?"

"On that point also, we are still uncertain. It seems that this robber planet in some way needs the strength of another world to regenerate itself. According to our reckonings, they are drawing away over thirty per cent of the earth's electrical energy. We have been able to arrive at this figure with the aid of tables from your time. And as we live, so to speak, on the crumbs left over by them, we have to work hard to get enough power for our purposes. A good many of the old generators are still in good shape and some of them are used when the Drusonians are making less than their usual demands on the power system of the earth, but in the main, we use the radiated energy of the sun. In this one department, necessity has forced us to make many improvements on the old machines for the purpose and even to invent new ones. And, compelled by need also, we have built up a subterranean civilization in the rock-galleries underneath our peninsula. There we have our gardens; there we raise fungoids on which we live, for the most part, meanwhile making use of the subterranean streams of hot water. Every person

in our community must give five years of his life to the service of humanity. It is considered honorable to offer to do this service in the mines."

Judith nodded. "Mankind rose out of the caves and now goes back into them. And really, when you consider it, those great cities of the twenty-first and twenty-second centuries were nothing really but cave-dwellings, man-built cave-dwellings in man-made cliffs."

Hurst spoke impatiently, "Let's not get away from the main subject. These conquerors of the earth are insect-like; we must take that much as established. They rule by means of the Oracles. But how do they enforce their decrees?"

"With aircraft," answered Thankmar. "There are also beings, insect-like in form, that keep up a continual tour of inspection around the earth, from the air. But they do not come into the region of the northern cold; like all insects, they cannot bear low temperatures. The inspecton service flies in a wedge-formation and is usually fifteen in number. There are tales from the old times of revolts in different parts of the earth when Oracles were thrown down and the priests killed. Immediately these insect-aircraft appeared from all sides and exterminated the humans of the district by poisonous gases which they exude."

"Have men forgotten that they themselves once ruled the air?"

"The only airplanes that still exist on earth are in the hands of we northlanders. But we are careful, as a rule, not to go far south with them. At the edge of the Arctic circle, we leave them in safety and when we wish to come farther, we use sailing ships with auxiliary motors. We dare not use any large or prominent means of transport. The Drusonians would locate them and destroy them."

"Yes, but what use do the Drusonians make of their conquest of mankind?" asked Judith.

● Thankmar answered. "This also is somewhat uncertain and can only be deduced from the use they make of their power. According to our view, they need men for their work, perhaps also for their nourishment. They promote wars by means of one Oracle sending its tribe out to make war upon that of another Oracle and demand that the prisoners be placed in the service of the gods. From those who are killed, the heads and all interior organs are collected and laid before the gods as booty of the war with religious ceremonies. Our observers report that these parts are preserved for long periods by refined chemical methods.

"The peoples and clans that make war on one another believe they are fulfilling the will of the gods and gaining their favor to protect themselves against evil of all kinds. But they only succeed in helping the Drusonians by self-destruction.

"Whatever might be said against the old ages of wars, they were undertaken for the good of men, and only other men benefited from them. But today the whole business only succeeds in nourishing parasites out of space and redoubling their strength. It is a rule of life that one being lives by the death of others. In the past, we men have used the other animals for our food and betterment and now we are being used in the same way. But for us it is worse, because we know the extent of our fall. We look on this system of being used, at least we Atlanteans, and since we understand what it means, we wish to break the yoke that binds the earth. Since we have found you, we have every confidence that you will be able to bring us the science of the old days and help us to achieve this. Therefore, the awakening of you sleepers is a matter of the highest importance for the whole human race. If men of your age could succeed in keeping the spark of life alive and send it across a gap of three hundred years, we believe they are also capable of breaking the dominion of a foreign planet."

I looked at Judith and noticed that her cheeks were red, her eyes bright. The whole thing seemed unreal to me, like something out of an old tale. Yes, women are really the mothers of mankind. They have a feeling for everything that con-

cerns their children. We men sit by, think back, and sense the present only when it has become the past.

"Your colony, you say, is at Boothia Felix?" Hurst asked. "Why do you call yourselves Atlanteans?"

"We are followers of the great prophet," answered Thankmar, "Ferryman, the man who preached to humanity that it should come to its senses, before the conquest, and who later gave spirit and courage to the people of the north. Ferryman led us back to the sense of the eternal in the stars, gave us again the belief in the zodiac, the god of the year. In the north we learned again the truth of the sun-star, its birth, its heroism and its sorrows, which was called in one age Tyr, in another Jesus. In Atlantis this science was known for thousands of years and awoke once more in men in the right time, when they were altogether sunk in the contemplation of their soulless technical progress, their bodily comforts and achievements without spirit. Ferryman knew it all beforehand and predicted it all and foretold that mankind would only be free again when it had won back its inner pride and inner freedom. Turn back to Atlantis, he told us. And if Atlantis itself was gone, there remained parts of that great land of the forefathers still unsunken. And new parts are returning; England is no longer an island and new islands have risen between the Azores and the coast of Africa. We await the day when Atlantis, the land of our fathers, is our own once more, and therefore we call ourselves Atlanteans."

Judith glanced at me. "Do you remember the last day when that man met us at the door of the cathedral? Was that not Ferryman?"

Thankmar asked, "Did you really see Ferryman yourselves?"

"Yes," said Judith. "We saw him and heard him and did not believe him."

Thankmar nodded. "Be glad that you have seen him. Beside yourselves, he alone has come living from your world."

Hurst, who had been listening attentively, could not repress a smile. But in order not to appear discourteous to our host, he asked quickly, "How did it come that you came to look for us only after an interval of three hundred years?"

Thankmar explained. "Fifty years ago, Beaulieu, the great historian and philologist, decided, as the result of his researches, that our forefathers had collected at Aachen a kind of holy place of science, where all human knowledge was gathered on the side of Charlemagne's ancient capital. If we could succeed in finding this place, every laboratory and library in Boothia Felix would be enriched. There was a long controversy over this theory, in itself arousing a good deal of interest and curiosity. Then new finds among the old records made Beaulieu's theory seem sounder than before. His son carried on the father's labors. He died four years ago, leaving a Testament in which everything that would be necessary for such an expedition was worked out to the last detail. He had carefully planned maps for the whole thing, weighed all the possibilities and gave full directions.

"As is often the case, death was the greatest possible aid to Beaulieu's work. All controversy ceased and everyone was of one voice that a research expedition ought to be sent out in accordance with Beaulieu's ideas. Of course, there was a great deal still to be done before the expedition could actually set out. As a doctor and a friend of Beaulieu's who had already made several trips to this part of the world, the command of the expedition was given to me. We took airplanes to the coast of Lapland, where there has been a colony of our people for many years. And from that point onward there is a chain of stations, southward, in which men faithful to us are to be found. Of course, they have to be constantly on their guard, dare not meddle in anything that goes on and must help the inhabitants in their senseless projects. They are mostly priests, and in their temples, the art of tactics and strategy and all the other matters concerned with war are taught, and the armies are sent forth under their guidance to make

prisoners for the Drusonians. Militarism has become something holy, since it is a service to the gods, these gods who are sucking our poor earth dry. And our spies must serve even in these wars.

"From Lapland we worked south as sealskin sellers and crossed Finland to the Baltic, and from there on to the mouths of the Rhine we made our way in sailing ships. We came south with a caravan from the Rhine mouths and, according to Beaulieu's directions, bought this piece of land as a garden and breeding-spot for our horses. It was over a year before we could find the entrance to your temple on the bank of the Rhine, and even then we were at some difficulty to understand how it could be an entrance, since part of it was under water."

"I can explain that," I told Thankmar. "That was the water-gate through which water was admitted to the stadium for swimming sports. Did you come in that way? It was certainly a rather roundabout route."

"There were a good many interruptions," admitted Thankmar. "A second expedition, which started out to bring us further information in newly discovered ancient records, was captured in Finland at the behest of the Oracle in Uleaborg. As luck would have it, the Finns did not search them for either instruments or papers as the priest there was one of our men and knew how to hinder things. Our friends were taken in charge and placed before the Oracle for inspection, whereupon the god asked that their possessions be brought in. They showed the god the sealskins the travelers were carrying and he announced that their commerce was all right and should be permitted."

"What kind of a temple was it?" asked Judith.

"It was a little hall with a chapel at one end, painted blue along the sides — the stars and the earth and moon. Opposite the moon, a representation of Druso is worked in red gold, whose attraction is balanced against the moon's on the opposite side of the earth. The robber-planet plays the part of the home of the gods in their cult. Directly under this golden star is the cylindrical crystal pillar from the top of which thousands of fine golden threads, like hair, spread in all directions. These threads crackle and give off electric sparks. They must be some form of antenna which connects the Oracle with the inhabitants of the star.

"Our people try to observe as many of these Oracles as possible, and we find that most of them follow the same general pattern. I must mention also that these temples are also meteorological stations for the tribes that serve them. The Oracle predicts what the weather will be like. The Drusonians' methods of observation must be very good, for they never make mistakes, and no small part of their influence is due to the fact that they are able to tell these superstitious and unscientific men that they control whether there will be a storm or sunshine on the following day."

"Our first problem," I said, "seems to be to discover the exact nature of the life of the Drusonians. With that information—"

"Yes," Hurst cut in, "but we must also know exactly by what means they are retaining Druso in its position with relation to the earth and the moon. Any plan to get rid of the robber-planet must be based on some means of breaking its connection with the earth."

"It seems more important to me," said Judith, "to get to Druso itself and discover on what basis the power of these lords of the earth rests."

"But before everything, you must get back your full strength, you masters of the old time," said Thankmar. He glanced at Flius, resting apathetically in his hammock. "Then we will really make use of you. But I have an inner certainty that now we will win our freedom and a new race of men will bloom on this earth."

It was as though Thankmar's words had wakened Flius from a doze. He lifted his head up and said sadly, "We from the past had hoped that war was a forgotten thing for humanity. Now we wake after three hundred years and find that

humanity stands face to face with the greatest war in its history."

"No," said Thankmar, "this is not a war. War is the name of the institution in which men foolishly slay each other. War rules here on earth today among these poor men who destroy themselves to do the will of their gods. But what we are undertaking against Druso is only the regaining of the position to which we have a right. All the wars that have taken place up to the present were in reality nothing but civil wars. But against Druso we are engaging in the old struggle of man against Nature, which ever wishes to destroy him."

CHAPTER X

The First Step

● The life we led in the subterranean temple and wild gardens above was for some time the gentle life of convalescents. It was hardly what one could call a real life, but we learned enough from Thankmar and his companions not to be quite so helpless in the new world into which we had come. We began to understand their language better. That was already a great advantage, but Thankmar's companions seemed inclined to hold back from us somewhat. In answer to our questions, Thankmar told us that word had come from Boothia Felix that we be allowed to orient ourselves without interference; it was Liuwenhord's order. And to the question as to who Liuwenhord was, Thankmar answered humbly, with sunken head, "The chieftain!"

We felt hardly any fellow-feeling for the natives. From time to time a man came with a span of oxen, bringing us wood. He was a big, surly blond animal who called to us with loud "Hoos" and "Hahs." Thankmar informed us that he was trying to get us to give him spirits to get drunk on. The impression this man made on us filled us with a frightful sense of the primitiveness of the life around, and our few encounters with river-men and fishers showed us how wild and quarrelsome these people were. As soon as our strength and the desire to work came back to us, we began to help Thankmar in the collection and registration of the scientific instruments and materials found at the station. This was a long job and even Flius was pressed into service. Armed with his notebook, he rested in his hammock issuing directions and explanations.

Judith's beauty bloomed anew. I noticed how the young people of Thankmar's company paid her honors as though she were a queen of some kind, even a goddess.

But the existence we lived was an uneasy one, divided between the badly lighted subterranean halls where there was not enough power to keep all the lamps going, and the sad, weed-grown garden above. We longed to get to Boothia Felix. Life there must be more like the life we had known. And we were also curious to see what machines they had there; we wanted to work, to do things.

I had begun a card-file and begun systematically to collect all the available information about the existing animals and everything that pertained to the natives. I gave wine to the woodman, who called himself Schrott, and measured his skull and bodily proportions while Judith photographed him from different angles. Long-distance pictures were also made of the women from the native village as they stood by the water's edge to watch, and of the fishers at work in the Rhine.

I had a noteworthy encounter with some of these wild folk myself. I was walking along the bank, watching a fisherman who was toiling over his net; there was a knot in it. I drew forth my pocketknife, clipped the thread that was retaining the whole business, and easily straightened it out. He followed my motions with close attention, then laughed, and taking my knife in his hand, he one by one pulled open the different blades, then reached under his skin cloak and extracted a gold coin, a thing old even in our time. By its inscription, it was a medal struck off for the winner of one of the Nobel prizes in the twentieth century. I was trying to make out the old printing on it when the fisherman's wife pushed between us,

looked at my knife with something like fright and cried, *"Isen!"*

Thankmar explained to me that the use of iron had been long since forbidden by the Oracles, but nowadays the strength of the prohibition was somewhat relaxed. The men willingly accepted iron tools, which they valued very highly and paid for with considerable amounts of gold. The old wives, more conservative than the men, still retained the old fear of iron which had been so craftily brought into discredit by the Drusonians.

"But it is interesting," added Thankmar, "that throughout the whole earth, with the exception of Boothia Felix, gold has become the unit of value as it was in the old ages."

Yes, gold! It was enough to make one pensive. We men of 2300 used it only for ornaments. During the generations between 1930 and 2000 it had been entirely dethroned from its old position as a medium of exchange. Already in 1930, several of the nations had ceased to pass gold coins from hand to hand for value. It lay silent in vaults.

Even in this time, the idea of equalizing production between two districts or communities by the shipment of gold was already realized as nonsensical. It was as though everyone were trying to measure something with a yardstick that was sometimes longer and sometimes shorter. But there were still many struggles and much misery in the world before this ancient metal that had already caused so much distress in the world was finally done away with. Gold was reckoned in its proportional value to other materials, like copper, leather, and platinum. Whenever a big business deal was carried on, there was a period of mathematical reckoning to arrive at the value of the products concerned. The whole business did not really end until the earth had achieved planetary unity and the United States of the World had become a reality instead of a dream. Then we had our "book-money," as you Atlanteans call it. Every man and woman carried his little book in which his worth to society was written. And whoever did any business with him received a check for the proper sum from this book and credit for the amount.

And now the old god Gold had come up out of his cellars and vaults and enchanted mankind with his gleaming eyes. It had established his old reign over humanity as a half-god and slave of the Drusonians.

● Hurst went into the native town. He wished to take down some of the speech of these wild folk with the aid of a pocket gramophone, but they looked on him with suspicion as a foreigner. Everybody was frightened of his machine and pronounced the great curse of the Oracle upon all enchantment and devil's work. Things were different when Judith appeared among them. The children came to her without restraint, and she played and joked with them so gently that they regarded her with friendliness and confidence. And when Hurst gave them little presents while she was there, they dared to come and take them and the game was won. The gramophone recordings, under our study, showed that their language was a sadly broken-down and barbarous form of old German.

As the months passed, my worry over Judith increased. According to our reckoning, the date of her confinement was near at hand. I was so excited over the matter that I could no longer stay around the temple and its garden. I felt that I must undertake something to get away from myself. When I now think back to those days, I cannot but accuse myself of a frightful lack of caution. What I did placed all our lives in peril, but I did it without consideration or forethought, merely to have something to do. This 17th of September, the day I began the great adventure, has become a day of importance for the whole of humanity, but I do not wish humanity to look upon it as a day that marked any heroism on my part. I was, in Ferryman's words, under the command of some inner demon.

I had found among the stores of materials that had traveled with us across the

gap in the years, a small power motor, a true marvel of the technical skill of our days, operated by stored solar energy with a power output of two hundred horsepower in a compass of no more than about 55 cubic inches.

Hurst helped me. He discovered the mirror apparatus necessary to recharge the motor. I built the machine into one of the flat boats that we had purchased from the natives. When Hurst and I tried the boat out, it drove us over the water with the speed of a storm-wind. It almost flew, so good was the performance of the air-screw we had attached for propulsion.

This boat was the basis of my undertaking. I had heard that at the new mouths of the Rhine, which had been pushed far to the east by the rising of the land that had once been the English Channel and Dogger Bank, was a great bay filled with wild birds and seals. I tried out my hunting weapons, taking, as a means of protection, a high-powered electric rifle and two light bird-guns built on the "flowing-air" system, and a many-colored camouflage covering that would enable me to approach the wild things with comparative ease. Equipped in this manner, I rose at dawn, left a note for my companions and went off down the Rhine on my long journey. I slid along at nearly seventy miles an hour, reached my hunting place and shot a couple of ducks. Landing on an island, I began to cook one of them over a spirit-fire.

Then I noticed a buzzing in the air and reached for my weapons. In strict formation, fifteen dark dots were approaching through the air, and remembering Thankmar's words, I sensed that they were one of the Drusonian inspection-squadrons. There was no place to hide on the flat sand-island, but I quickly threw the camouflage covering over boat, game and myself, and with the heavy rifle in my hand, watched the approaching squadron of fliers. They circled around the island and the commander, or at least the one at the head of the formation, sank down. It reminded me of an enormous, ugly plum-beetle. As it approached, I perceived what had drawn its attention. It was not the colors, but my smell. I would have to fight for it. I looked to my gun, and as the leader passed over me, some thirty-five feet up, I fired. He fell. I leaped out and took cover behind a sand bank, thinking that the others would fall upon me at once, but they continued to make little circles as though watching the islet. I took aim at another target, fired, and one of the others fluttered on with a broken wing. I fired a second time; he fell. But the most astonishing thing was that all the rest continued their circular movement, so that without the slightest difficulty, I was able to shoot them all down, one after another, needless to say, to my great astonishment.

When the last one had been shot down, I came forth and found the bodies on the edge of the beach. I turned them over and what did I see? Fourteen were metal machines. Number one, the being that I had shot first, was a great insect, equipped to control the others with a little electrical apparatus which I at once possessed myself of. One of the metal bodies I loaded into the boat with the body of the insect; the rest I pushed into the shallow water. Then I crossed to the Rhine mouth and hid in a thicket until dark. From my hiding place, I could observe that more and ever more groups of these strange flying machines were gathering from east, west, and south. They hung about the place for some time, then flew off toward the north. Luckily, a storm gathered, or undoubtedly the fliers would have been able to follow the odor of myself and my boat. But they missed me, and when nightfall came, I got in again and in a few hours was back at our garden.

Hurst was the first to come out and greet me. When I saw him, he was pale and cried out, "So you're back! If you hadn't returned, I think all of us would have died. Our hosts are good people, but they don't understand us nor we them. I have many a time had the feeling—pardon it — as though even these northern men, who are as different from the natives as the Greeks from the savages they

used to encounter in Asia, were hardly more than animals beside us. For one of us to be lost is like losing a piece of the world. If Judith had not been here, I fear that Flius and I would have come looking for you or ended our own lives. It must have been like that in the old times when the crew of some ship was cast away on a desert island. The connection between us and you is too strong."

"And Judith?" I asked, also pale.

"Judith," said Hurst, and the old ironic smile came back to his lips, "is altogether the woman, mother, and queen. Now I can understand the old biological dictum of Professor Jorgen W. Harms—Woman is the real mankind, and man is a luxury of nature. She carries within herself the seeds of new life and is inexhaustible while we despair."

Judith and Flius were coming toward us. Flius had genuine tears in his eyes that almost unmanned me. Judith gripped my hand hard. Then she asked, "What good news have you got for us?" There was warmth and strength and trust in her words.

The three told me how, in the afternoon, Thankmar and his people had come back from the village with the news that something very extraordinary was taking place. Whole squadrons of the Drusonian fliers had passed above, headed north, and the Oracle had announced that everything unusual that happened along the river was to be reported at once.

● The results of my unusual hunt were unloaded. It was at once evident that the single flying Drusonian multiplied his strength a dozen times by his accompaniment of metal machines, which were connected with him by a comparatively simple but extremely cleverly designed inductor. The metal machines contained, as we soon discovered, a variety of chemical substances that promised considerable work in the laboratory before their master could be altogether exhausted. But we could guess that they were gases, concentrated in solid form, and of various kinds, those that would be useful for several purposes.

The leader of the group was armored in chitin of unusual thickness and strength, much stronger than that borne by any earthly insect. It was reminiscent of the hard shells of the great sea-tortoises. The odor of the animal was peculiar. Flius declared that the thing had an organ which permitted it to give off strengthened or weakened clouds of odor of varying kinds as well as intensity and deduced a possibility of speech by means of smells. Hurst declared that the animal's antennæ were movable and capable of emitting sounds. Altogether, the animal that lay before us was a curious assemblage.

We went over it carefully. It was Hurst who summed up the results of the examination. "We must remember that we are dealing with a race of insects," he said. "Each one of them serves a special function. This particular one had the function of watching. He is a police-organ of the insect-horde and in the full sense of the word, nothing more than that. Very likely we will find among other members of this insect horde, other beings that have specialized organs arranged for other purposes. From what we know about them already, I doubt that all these Drusonians are alike. I think that we may take it that there is another race of these insects, with more intelligence, which uses the rest much as the ants use the plant-lice. On this basis, the domination of men could be easily explained also. But we need more information."

In fact, we made up another expedition two weeks later, on which Hurst accompanied me to the island of my adventure where we found more of the metallic corpses and among them some provided with apparatus extremely sensitive to the reception of light and others that were able to register the slightest alteration in meteorological conditions. Thus these flying Drusonians served a scientific as well as a police function. We possessed ourselves of all the finely made apparatus and sank what remained of the metallic bodies in the deep water, then raced back to the temple at top speed. Next morning

we heard from the village that, just after our arrival, one of the Drusonian squadrons had run along the river from north to south; evidently it had heard the buzz of our propeller. After this, we confined our journeys to the night hours, but one night when we ventured forth in our boat, we observed that a strict observation service had been set up over the stretch of ocean between Scotland and Scandinavia. The Drusonians were alarmed by the loss of one of their number and were on the watch.

Thankmar's decision on the whole business was that we would have to wait several months yet before venturing northward toward Boothia Felix.

CHAPTER XI

Impending Hostility

● Every form of organic life, even the intelligent ones, develops according to the same law. We, in our narrow circle of interests, had sought no contact with the outer world. Thankmar's people more or less avoided us. Most of them were constantly coming and going, busy with the leather traffic or other affairs. They must play their parts of foreign merchants right out to the finish. We ourselves had much to do in instructing them how to handle and care for the salvaged materials, machines, and weapons. It was a stiff job. We were the professors of a tiny university. The only one who went about at all was Hurst, and his visits had consequences that we could not possibly have foreseen.

Hurst, whose hobby it was to interest him in the speech of these barbarians, naturally enough, paid a good deal of attention to the girls of the tribe who did whatever agricultural work was performed among them. Grietsche, a quick-witted little thing, was a special favorite of his and often went fishing with him. He won her mother's good will by presenting her with something the tribe set great store by, that is, some sewing-needles. He spoke to us of Grietsche as a hunter might speak of his dog. We, knowing Hurst's phlegmatic temperament and altogether scientific mind, thought nothing more about it.

But Judith, who had spoken to Grietsche once or twice, felt herself impelled to explain the uses of soap to her.

From that day forth, the young girl came to her labors in the garden with a skin washed snowy white. And since she liked the soap, she did not stop with washing, but smeared it over herself copiously, enamored of its pleasant odor.

Grietsche also told Hurst some of the primitive sagas and legends current among these people. They have since been collected in the great work of the Atlantean Archives Department that deals with the subject. One of them, however, has remained unforgettably in my memory, for it touched us. Grietsche explained that beneath the Rhine there slept a race of evil men, bound by an enchantment. They had aroused the wrath of the gods by makings wigs for themselves to fly to heaven. They had attained the hall of the gods themselves and had there stolen some of the wine that gives eternal life to the gods. Thereupon the Lords of the Heaven angrily came to the earth, wrung the lordship of the globe from the enchanters and led men back to their belief in the gods. The enchanters were sunk beneath the Rhine and rest there in a great hall, condemned to a thousand years of sleep, and when they come forth, the water of the Rhine will become boiling hot and they will float out to the sea like cooked fish.

Soon Grietsche grew so fond of our garden that it was hard to get her to leave it, and she even slept among the bushes there rather than in the hut of her parents. But Hurst was so abstract, so much an inhabitant of another world, that we paid no attention. And then the misfortune was suddenly upon us.

While we were eating supper in the wooden hall, Grietsche and her mother came into the garden and called for help. Her father, the headman of the place, had bidden her marry the son of a chieftain farther down the river. The young man had come for his bride, as among these

people there was a kind of trial marriage before the real marriage ceremony. Grietsche was horribly worried and had come with her mother, a lank, bony old woman, to beg that we protect her. And when Thankmar, who was our leader in such matters, questioned the old woman, she replied simply that we ought to buy off Grietsche from this marriage. She named the price: some axes, some needles and a saw, which her father was specially desirous of obtaining.

Hurst looked on anxiously, "Why not buy her?" he asked.

But Thankmar was very serious. He sent mother and daughter back to the village, gathered us all about him and explained. "This is something that we had not foreseen. My young men, before they undertake such an expedition, must always swear that they will have nothing to do with the women of the people. We are determined not to mix our blood with theirs. Therefore this is a serious matter and we must reach a definite decision on it at once. This law has been in existence for over a century, and now you have come as though you had fallen from heaven. This young lord"—and he indicated Hurst—"naturally did not know about our laws. What he has done does not entitle him to the sharp penalties that are established for such cases. But we dare not raise quarrels here. I think that the only thing we can do is break off here and leave as soon as possible. Fortunately, most of the things in this temple have been gone over and packed up, but what remains we must get through with as soon as possible. There will be a war very likely, and we must get away, because that will mean a new descent of the Drusonians."

Hurst was thoughtful. He told Judith that he would willingly have purchased the girl and taken her to himself. It was difficult enough for us to explain to him in what kind of a position he had placed us all. In spite of his knowledge of the old books of adventure, he was so much the egotist and æsthete that he could hardly appreciate what he had done.

Thankmar went to work at once. That very night, one boat, loaded with various finds, went down the Rhine. We ourselves, with Hurst's assistance, built the motor into a bigger boat, that in case of need would serve us for a rapid flight. Thankmar called in the members of the band who were out with light-signals, and by the next morning, it was clear that he had reckoned accurately on the danger of the situation. Weaponed with spears, bows, and axes, the inhabitants of the village appeared to demand the delivery of the girl. Thankmar spoke with the father and the mother and the bridegroom. He informed them that they might come in and search for her wherever they wished. He himself would wait outside with two of the young people. The three came, sought through every corner of the garden and did not find the girl, then went away, disappointed and a little angry. But soon thereafter, the father was back, declaring, "Boats have gone down the Rhine. You must have sent the girl down on one of them. You stole her!"

Thankmar denied it, swearing by his life and the Oracle, that should revenge any untruth, that we had done nothing with the girl. And to console him further, he paid over the whole price that had been demanded, together with two extra axes.

Judith shook her head. "You have handled it cleverly, Thankmar, but too cleverly! Now you have roused the cupidity of these people."

And so it was. On the next day, messengers came to demand more. Luckily everything was so near ready for our departure that Thankmar could give them a flat negative. We got into our big boat, in which we had bestowed the rest of our belongings, and rowed down the river. But as we rounded the first bend, we saw twelve of the native canoes waiting for us.

That meant fight. I steered the boat. Apparently we were still rowing, but Hurst turned on the machine; we dashed through their midst while a hail of spears and arrows fell into the river about us. One of the boats was too close aboard;

our prow struck it and it turned over, but we ducked under the second salvo of spears and raced away down the river at a speed that must have astonished the natives.

When night came down, we turned on the motor again and ran down the length of the river to its mouth. Here we gathered with the rest of the band among the seal islands, distributed the packs again and lay down for a rest.

"Let us divide up the boats," Thankmar advised. "Tonight you can take the flatboat and get to the Heligoland peninsula. There we have a fishing station amid the red rocks. Our people will take care of you and you can hide in safety in the rock caves."

We reached the rocky nose of Heligoland where it stood out over the grassy sand dunes like a castle of the olden times. Great deep caves, belonging to the people of Boothia Felix, ran far back into the red rock. They were dry and admitted light through what seemed to be natural windows in the edge of the rocks. Fine nets were spread over these openings to keep the sea-birds from flying in. Judith could hide here very well while our people carried on a kind of commerce with the neighboring natives. When the sun shone, she climbed up an iron ladder fixed in the rock to sun herself and rest in the open air. From that height we could see afar, away to the east across the plains, to the north and west the grey, quiet sea, set with tiny islands around which fluttered clusters of sea-gulls. There seemed to be a good many walruses about also, barking and sporting on the islands. Here in our time had been the North Sea, and this alteration of the North Sea to a mere bay seemed to us a symbol of the general alteration that had overtaken humanity. In the days when Druso was conquering the planet and balancing itself against the moon on the opposite side, great changes had taken place. The whole bottom of the sea had risen up and become land.

But more important than this new surrounding world, so unfamiliar to us, was our waiting for Judith. Hurst, Flius, and I wondered how she would pull through the ordeal so far from all the cares and safeguards of the time in which her child was conceived.

Thankmar was very silent these days.

One night, when I could not sleep well, with Judith's breathing so hard and quick beside me, I climbed up on the rock to find him already there. It was a bright clear night, and I saw Thankmar, both hands raised in the direction of Aldebaran. He was praying. When he turned, he passed one hand across his eyes. He wept.

"What's the matter?" I asked.

"I have prayed to the bearer of the Heavenly Cross," he answered. "It is a sign of the inexhaustibility of mankind when this child, which Judith expects, carries its life across a gap of three centuries. To think that a child which has lain so long within its mother's womb is still living gives one a sense of the eternal in man—a miracle. We need miracles. We need the impossible, since nothing possible has been able to serve us."

And then occurred what was really a miracle. Almost without pain and altogether without trouble, the child came into the world—a little girl. In the morning it lay beside Judith. Thankmar had prayed for help since there was no woman with us to wait on the mother. And now she lay there on her stony bed, looking out through the stone window at the gray sea, its white foam-flecks shining in the sun.

"We're all right," she said to Hurst and Flius, stretching a hand out to each as they stood by her bedside. But I sat behind her, holding her head tenderly in both of my hands.

Then we heard footsteps. It was Thankmar with his men. They knelt and did honor to mother and child as to gods. But Judith said, "The race of men is unconquerable, and we will yet overcome the Drusonians as we have overcome the rest of nature. We men have suffered defeats before and yet wrested victories from them. We have within us the true god, the unconquerable spirit." Therewith

(Continued on page 1172)

(Illustration by Paul)

As I looked down, I saw a huge dark cylinder projecting up from the apex of the inverted cone. Its outlines were blurred and wavy through the heated vapor.

TRADERS IN TREASURES

By EPAMINONDAS T. SNOOKS, D.T.G.

● "Ladies and gentlemen of the international audience! You will now be transported in sight and hearing, for this, the sixth of the great Synfoco Travel Hours, to the South Pole of Inaccessibility. Two weeks ago you stood beside Colonel Cameron on the summit of Mount Everest, and gazed down upon the Roof of the World. In a few moments you will join Captain Nils Fjord at the spot which Nature chose to hide longest from the eyes of man.

"I need not say, perhaps," went on the level voice of the announcer, "that the Poles of Inaccessibility are at some distance from the true geographical poles, discovered many years ago and comparatively easy of access. The North Pole of Inaccessibility, so named in the days before the introduction of aircraft, lies in the frozen Arctic Ocean, north of Siberia. It has been crossed by transpolar flights in recent years, and presents no features of scenic interest.

"On the contrary, the South Pole of Inaccessibility, on the surface of the storm-swept Antarctic plateau, presents a most remarkable natural phenomenon, which you will presently behold. Seven years ago it was visited by the courageous explorer who is about to tell you his story, and who encountered there a most amazing and dangerous adventure.

"Years have passed, during which he has sought to return to that place of danger. A few months ago he succeeded in obtaining the necessary support from the sponsors of these unique broadcasts, the International Synthetic Fuels Corporation. I am pleased to tell you that the fondest hopes of Captain Fjord and of his backers have been realized; and that a discovery of the most profound importance to mankind has been made, even within the past few hours. The story you will now hear from Captain Fjord's own lips.

"The short-wave projector, which carries his words by radio to the relay broadcast stations of the two hemispheres, is transmitting also television images of the standard two-hundred-line frame. These also are being rebroadcast on 12.6, 25.2 and 50.4 megacycles. Kindly tune your televisors to the wave which you receive most strongly, and stand by for Captain Fjord's address."

● Since the first writer of science-fiction took up his quill pen, the most interesting speculation of the fraternity has been to picture the meeting of human beings with some different, though equally intelligent form of life. Almost every conceivable form in which such an intelligence might exist has been pictured, with evenly balanced conjectures as to whether co-operation or conflict would be the result of the encounter. However, one possibility has been generally overlooked—that such an intelligence might be linked with such unhuman sensations, especially of the flight of time and of different frequencies of vibration, that neither Mankind nor their visitors would be able to recognize the existence, as living beings, of each other!

This story is presented with that intriguing idea in mind; and endeavors to set forth, among other things, the reactions of an intelligent "mineral" to conditions above the ground. For instance, such a being might have very definite senses of heat and chemical action, but none of the limited range of phenomena we call light; and a year to it might seem no more than a minute to us.

The announcer's voice had hardly ceased, when millions of the hearers—and spectators—of the Synfoco Hour were turning the tuning knobs of their home televisors; millions more settled themselves more comfortably in their theatre chairs while the operators of the projectors made the last adjustment on the triple-wave-length receivers which made the magnified images triply clear. Then the play of lights and shadows cleared, and the full-length form of a tall man appeared before their eyes. What first commanded attention was the strange scar which spread over almost half his face; then his garment (like a flying suit), the snow and ice about him, and the odd apparatus, like a field searchlight with its generators and attendants in the background. The spectators recognized the ultra-short-wave radio transmitter which sent its message back to civilization in waves less than a meter long.

The Mysterious Crater

● The lips of the explorer moved, and his voice, in almost a natural quality, spoke from the countless screens. A white mist floated before his lips, bearing witness to the fact that the polar scene was a real one.

"My friends," said Captain Fjord, "in attaining the ambition of many years, I am almost overcome by the emotion of thankfulness that my efforts, with the generous support of those who have helped them to succeed, are to be crowned with the utmost benefit to mankind. Providentially, this lonely spot, barred from the outer world by the rigors of a perpetual winter, is the repository of a treasure whose value is above reckoning in money.

"The full extent of its resources are beyond any estimate at the present moment; but I will only say that our labors, conducted with equipment whose inadequacy to the task we have just realized, have secured within the past few hours more radioactive material, five times over, than the world has hitherto possessed!

"I need not inform you of the medical value of this discovery; but I will say that the untouched deposits of radioactive substance—at this moment quite unapproachable—will make demands upon physical science to develop a new technique for their use. I will add that the preliminary reports of our chemist, Dr. Lemieux, have shown that there is present at least one element with an atomic weight higher than that of uranium and, therefore, presumably the original substance from which all the radioactive elements are derived. We are taking with us all that we can of these priceless discoveries, and will return at the earliest moment to civilization, in order to place them at the disposal of science and of the art of medicine.

"Before I turn the televisor's 'eye' on our encampment and the scene of our labors, I must explain to you a few of the circumstances of our presence here.

"Seven years ago I had the fortune to come upon this treasure-trove and, what was more, to escape from it alive, though injured, as you see.

"It occurred when I was attached to the Hendricks expedition of 1937-1939, whose work in surveying unexplored Antarctica is familiar to you all. At that time, I undertook, as a part of the routine, airplane flights over this plateau. I need not dwell upon the difficulties, except to say that, even in the Antarctic summer, the temperature at this elevated point has not been known to rise within fifty degrees of the zero mark—and that hurricanes of eighty to a hundred miles an hour have been known to sweep down from the mountains unexpectedly.

"Nevertheless, my fellow-pilot, Lieutenant Fleming, and myself had made several successful flights and returned safely to our base with photographs of this region. The monotony, however, of ice hummocks and gulleys was relieved by few contrasts of rocky peaks.

"On the occasion of our sixth flight, however, an astonishing sight appeared—a cloud of steam, apparently, rising in this eternal cold. Approaching it, we found that we had not been misled. From an opening in the great ice mass, steam was shooting up to a height of nearly a mile.

I say steam, though, indeed, before it had reached a fraction of that elevation, it had turned into the finest of snow, or rather powdered ice, which drifted down upon the waste beneath.

"Lieutenant Fleming, who was at the controls, turned our course toward this extraordinary phenomenon. Its nature was, obviously, volcanic; but no such activities had hitherto been discovered so far inland. A gust of wind swept aside the steam cloud temporarily, and he headed directly above its source.

"Beneath us was a funnel-shaped cone, sunk down deep into the enormous ice-cap, and from which hissed up the vapor. At the bottom, it was comparatively narrow, and there, as I looked down, I saw a huge dark cylinder projecting up from the apex of the inverted cone. Its outlines were blurred and wavy through the heated vapor; but obviously it was a 'chimney' of heated lava, thrust up from the interior of the earth.

"As I looked down, the odor, not of sulphur, but of ammonia, came to my nostrils; and then, as we passed directly over this singular formation, there came an overpowering wave of heat!

"I know that I lost consciousness for many minutes; that Fleming, shielded more fully than I was, was nevertheless strangely affected and, realizing the impossibility of landing safely, turned our plane toward the expedition's base. How heroically he succeeded in piloting it almost into safety, I alone can realize. We crashed within the sight of our comrades at the encampment. Fleming succumbed to his injuries within a few hours, and my own recovery, miraculous as it was under the circumstances, was delayed by the strange burns which have left many scars besides those which you see.

From Calomity to Blessing

● "The cause of those burns was not apparent; nor why, in addition to the photographic films which we had exposed, all those which remained unused in the plane had been hopelessly fogged. It was my firm belief, however, as soon as I was in a condition to reflect upon the happenings, that the strange formation at the bottom of that pit was highly radioactive and therefore, to approach it with proper safeguards would turn our misfortune to good account.

"It is not necessary for me to recount here the series of disasters which overtook our expedition on its return, nor to explain why the international troubles of the past few years have delayed my efforts to obtain suitable equipment to make this journey again.

"At last, however, the International Synthetic Fuels Corporation provided the necessary funds and, with no more than the customary work of modern polar exploration, we have reached this spot a few miles from the scene of the strange volcanic activity—on which, in honor of our comrade who gave his life for its discovery, I have bestowed the name of Fleming Crater.

"Even at this distance, the instruments carried by our party detect strong radio-activity. You will observe that we have built up, on the side toward the south of our enclosure, a metallic shield.

"Since it was necessary to approach Fleming Crater with the utmost care, we resorted to the use of motor sledges, whose operators were protected by lead sheathing. We have not as yet been able to reach the rim of the crater, surrounded as it is by an enormous truncated cone of ice which is impregnated with the radioactive matter. So great are the emanations that even the sheathing of our sledges is not sufficient protection at short range. No means yet devised can make it possible for life to exist in that crater itself.

"Fortunately, however, the explosive action of the volcanic matter beneath has thrown out comparatively large masses, similar to the lava 'bombs' which are ejected by the eruptions of other volcanoes, to some distance from the crater's rim; and of these we have gathered up, by means of long tongs, sufficient of the radioactive material to fill all our leaden boxes.

"I will now cause the 'eye' of the tele-

visor to be turned upon our encampment. Unfortunately, as I have said, we cannot show you Fleming Crater itself; for, even could we venture into it, the intensity of the invisible radiation would paralyze the photoelectric cells of the television camera.

"However, you may see from afar the steam cloud, much diminished in its volume—it is hardly more now than a gentle mist—and the flashes beneath it of a radiation which is invisible to our eyes."

A Few More Millions

● The television camera which the captain had been facing was now evidently wheeled to a porthole in the metallic stockade; and the radio audience looked toward a distant wisp of cloud on the horizon, and saw an occasional flash beneath it. The televisor's eye swept the enclosure, with its planes, its sledges, and its bundled-up explorers; and then Captain Fjord came forward again, holding up what seemed, in the monotone of the television screen, a lump of coal.

"I have said," the explorer observed, "that the value of the radioactive material in Fleming Crater is beyond reckoning in money. All the gold in the world could not have purchased yesterday the radium in the leaden boxes you have seen. What I hold in my hand, therefore, is not to be esteemed as a treasure, but as a curious freak of comparatively little importance. It is a diamond of about seven pounds weight, or about sixteen thousand carats, enormously larger than anything ever before discovered. It was found, encrusted with the radioactive matter, outside the crater's rim. The color is a light blue. I am not sufficient of a lapidary to appraise it, but I suppose that it has a value which may be conceivably reckoned at a few million dollars. Why it should be associated with the peculiar geological formation found here, our geologists cannot guess.

"I have said sufficient to impress you. I trust, with the value of this discovery; which may be put, let it be hoped, under international control for the benefit of all mankind. Within five weeks if all goes well, we shall be in civilization and our radium at work on its mission of healing."

The screen blurred, and was blank. The announcer spoke: "Ladies and gentlemen, the International Synthetic Fuels Corporation, sponsor of the Synfoco Travel Hour, announces that it has taken the utmost pride in being honored as the medium of Captain Fjord's epoch-making message; and that a special expedition is even now being dispatched to facilitate the prompt return of the great explorer with the priceless treasure he is making available to the world. No more fortunate coincidence has happened in the history of mankind than its falling heir to this piece of good luck when it can be of most utility. Nature has indeed gone out of her way to be benevolent.

"Two weeks from tonight the Synfoco Travel Hour will carry us to the deepest spot of the ocean, and there, beside Commander Marbro in his Dirigible of the Depths, the *Alph*, we shall look for the first time in man's history upon the bottom of that sunless sea. Ladies and gentlemen of the international radio audience, good night. Please stand by for your local announcer."

PART II

(From the Report of the Thirty-seventh Projection toward the External Surface.)

* * * * The absence of any perceptible heat, no less than the diminishing pressure, gave proof that the Exterior was again being approached. The increase in gravity was notable; and fuller utilization of the internal reserve of radioactive material was necessary in order to maintain the plasticity so necessary to vital existence.

● The outward rocks were yielding with sudden fractures and tremors, instead of flowing smoothly. At length, with furious rending, they gave way, and there was encountered a mass of *steam*—not in liquid form which baffled the Thirteenth, the Twenty-second, the Twenty-ninth and the Thirty-third Projections when

they had seemingly attained the full distance—but in that of a *solid!* Such are the unnatural conditions in that realm of inconceivable cold! However, the crystallized steam almost instantly reverted to its natural state, and flew outward into a nearly perfect vacuum. In liquid form, however, it continued to descend again continually, until regasified; and the thickness of this deposit must be estimated at fully a three-thousandth of the Radius.

The Exterior is in contact with a most tenuous layer of the almost unknown element *nitrogen*, blended with about twenty per cent of oxygen and other minor impurities. Only the faintest indication of radiant heat could be detected. Its source,* apparently girdling the place of observation, and intermittent, changes its elevation rapidly, disappearing entirely about half the time. The period of its cycle of activity, so far as might be determined from so inconspicuous a heat-source, appears to be about 366 Rotations.** The hypothesis is offered that it is at a considerable distance, at an angle varying some 24 degrees on either side of a perpendicular to the Axis; and that its temperature externally is about that found at a distance of two-thirds of the Radius from the Center.

Although the thirteen perceptible vibrations were emitted continuously, during the Projection's short immobility, no answer could be detected nor, indeed, was any to be expected. It is obvious that the Exterior is beyond all question uninhabitable by purposeful activity, in whatever grotesque form it might be conceived, except for a very brief time—a few thousand of the Rotations—and under highly artificial conditions, such as those created by the equipment of the Projection.

Under the difficulties presented, and the impossibility of venturing upon the Exterior which promised so little useful information, it seemed logical to make the best use of the unexpected natural wealth which this region of almost absolute cold affords. A method of fixing the nitrogen was devised which, if not of the highest efficiency, was the most practical, in view of the absence of pressure at the Exterior. While attended with some hazard, until a distance of at least one-thousandth of the Radius should be obtained, it was deemed worthwhile to run the risk. The utility of this rarest of elements is still problematical; but it is certain that its control by the technical devices of the Laboratories will discover applications sufficient to compensate the expenditures of energy and abrasions of material suffered by this Projection and its equally powerful if less fortunate predecessors.

To compensate for this increase of bulk, before the retreat to habitable regions was undertaken, a considerable portion of the surplus radioactive fuel was abandoned—especially that which had reached a disintegration of 30 per cent or more. (This was easy to replace before a tenth of the return had been effected.) The crystallized carbon,*** used to abrade the outward channel through the inert, chilly rocks of the Exterior, was also thrown out; the violent escape of the revivified steam facilitated the disposal.

After an exposure during some eleven thousand Rotations to the unfavorable conditions of the Exterior, the return began. The magmas† which, from their yielding nature, constituted such a formidable and power-consuming obstacle before, now accelerated progress toward the center * * * *

*The Sun. **Days. ***Diamond. †Rock softened by heat.

THE END

THE LATEST IN SCIENCE

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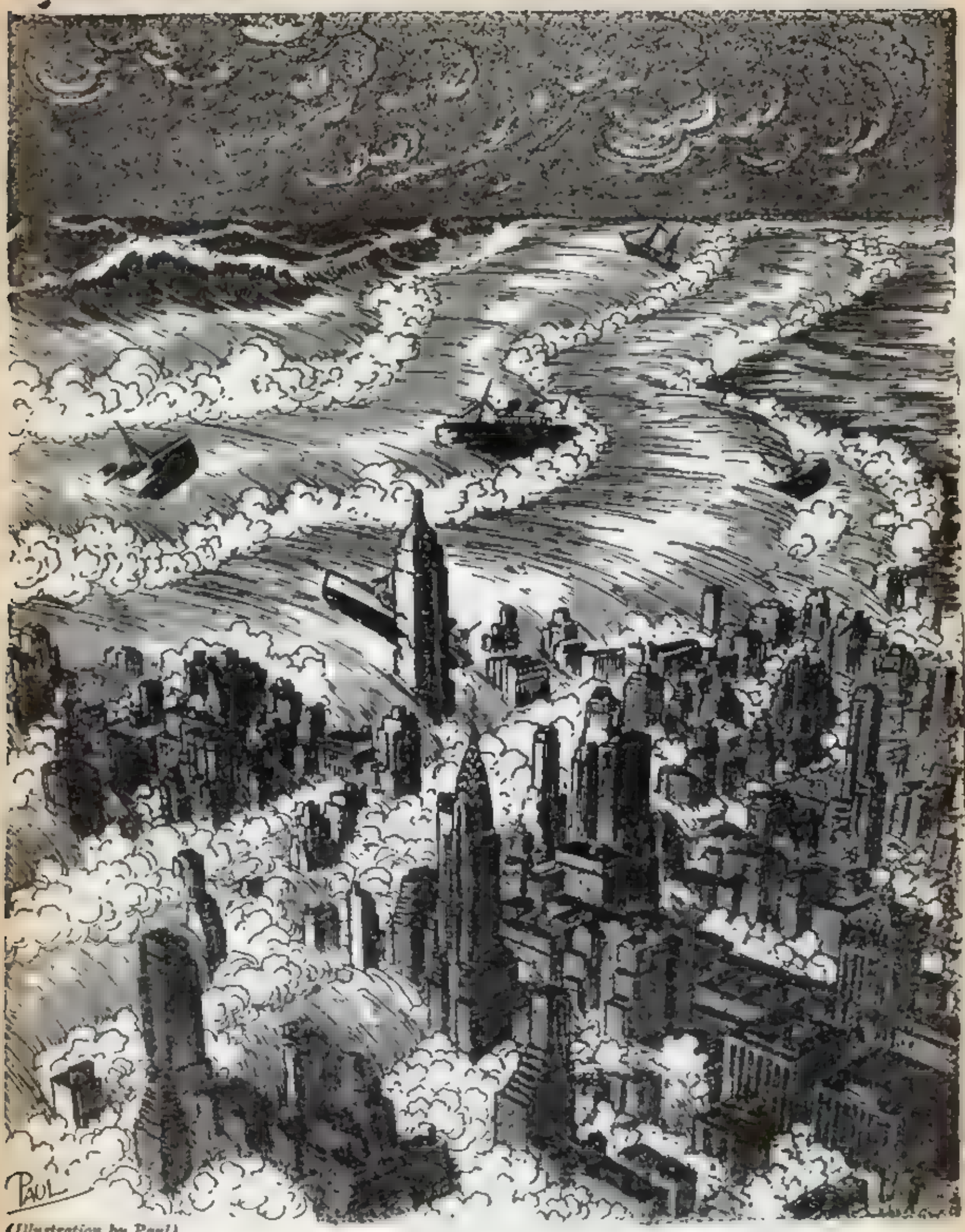


(Illustration by Paul)

The last thing I remember is seeing the buildings of Manhattan disappearing under a dark veil, and then the crow's-nest swung down until I thought we were going to the bottom of the river.

EARTHSPOT

By MORRISON COLLADAY

● Considering the recent success of the motion picture "Deluge," this story is most timely. In the movie, we are shown how the world can be inundated by the shifting of its interior, causing tremendous changes in the surface conditions.

Mr. Colladay accomplishes 'most the same thing in a different and new manner. Herein is introduced an original theory concerning the possibility of "earthspots," which correspond to sunspots on the sun, and the terrific havoc that such "earthspots" could cause.

● The first report of wire trouble came from the *New York Times* early in the evening of August first, as far as can now be determined. By eight o'clock, all telegraph, telephone, and radio systems were in difficulty. Shortly afterward, communication between New York and the rest of the world was cut off. Electric lighting and power plants functioned intermittently until midnight. From then until 4 a. m. New York was dark and without transportation.

After that hour, conditions rapidly returned to normal. All available repairmen were immediately put to work on burned-out instruments and fused wires. It took twenty-four hours to get the wire systems functioning with reasonable efficiency.

Early in the morning of August second, rumors began to trickle into newspaper offices of a great catastrophe in the South and Middle West. Most of the papers regarded these rumors as wildly exaggerated and treated them accordingly. However, on the morning of August third, the *Times* appeared with the first authentic news, together with a page of photographs, taken from the air, of the devastated area. A fifty-mile wide blackened scar in which every living thing, animal and vegetable, had been instantaneously wiped out of existence, it started near Savannah, Georgia, and stretched irregularly across South Carolina, North Carolina, Tennessee, Kentucky, Ohio, Indiana, Michigan, and on into Canada.

There was no question that what had caused the damage to electrical systems was a magnetic storm. There had been many of them in the past, though none so severe as that of August first. As to the cause of the tragedy in the South and the Middle West, the most varied and fantastic theories were offered. Occurring the same night, it was natural to suspect a connection between it and the magnetic storm, but this theory received no scientific support until Richard Ogden at the General Electric laboratories in Schenectady announced that he had traced the connection.

Ogden even then occupied a position in popular estimation comparable to that of Edison some years before. He disliked publicity, and as a result, when he began to appear prominently in the news, reporters were compelled to draw on their imaginations to give the public the personal details it demanded. I know that some of these stories were extremely distasteful to Ogden, and to correct them, I am venturing to give a brief account of the man as he appeared to those of us who worked with him every day.

In the first place, he is the least pretentious of men. That fact is the key to his character. He would never let anyone call him doctor or professor. Titles and clothes were the two things that caused him vast amusement. The idea of a man wearing a collar or necktie or polishing his shoes to make himself prettier was to him too funny for words.

Those of us who worked with him called him Ogden without any prefix; under the attention of strangers he usually preserved a stony silence. Even if he had not led the expedition to investigate the magnetic pole, he would have been remembered as a remarkable personality in an institution which had been honored by being the scene of the life-work of men like Steinmetz and Langmuir.

In appearance, Ogden was more like a Viking than any man I have ever seen. He stood six feet four inches and the beard he had never shaved was shining gold in the sunlight. I suspect he never wore anything under the blue flannel shirt, corduroy trousers and clumsy brogans which composed his costume for all occasions. Even in the Arctic, he added only a knit sweater, until the thermometer got into the double figures below zero.

During the last few years in Schenectady, I was his secretary in everything but title. He had always laughed at the idea of needing one. He refused to have any clerical workers about the laboratory. Records of his experiments were kept in the most fragmentary way, to the despair of the general office. That made no difference to Ogden, because he had a photographic memory which never forgot anything it once knew. He was not much interested in putting his discoveries to practical use. The corporation has always been enlightened in its treatment of genius, and no protests were ever made when he calmly ignored the occasional efforts to put the data of his investigations into such shape that the ordinary scientist could understand them.

However, headquarters was undoubtedly pleased when Ogden one day discovered accidentally that I could take dictation as fast as he could talk. I was gradually released from other work; and besides acting as secretary during several years past, I have conserved his time by acting as a buffer between him and a curious world.

When he made his announcement relative to the connection between the magnetic storm and the catastrophe in the West, I arranged an interview for the reporters who flocked to Schenectady from all over the country.

Something unprecedented had occurred which threatened the security of every living person. As long as the cause of the catastrophe was unknown, there was universal dread of its recurrence elsewhere. This gave Ogden's statement, in view of his position, great news value.

When he appeared in the room set aside for the event, there were nearly a hundred reporters present. It soon developed that none of them knew anything about science and, as is always the case, they asked many foolish questions. Ogden patiently answered all of them. Questions were asked by many persons in the course of the interview, but in my stenographic record, I have not distinguished them.

The Interview
(Stenographic Report)

● Ogden: "Well, I am at your disposal, boys. What do you want to know?"

Reporter: "All you can tell us, I guess."

Ogden: "That's too indefinite. You ask questions and I'll try to answer them."

(Reporters hold a short consultation and select one man to do the questioning.)

Reporter: "Was the magnetic storm of August first the worst one that ever happened?"

Ogden: "It was a bad one. They are always worse around the maximum sunspot period every eleven years. There have been bad ones before. A few years ago, one set the railroad station in Albany on fire and destroyed a telephone exchange in Sweden."

Reporter: "Why don't we hear more about them if they're as serious as that?"

Ogden: "Because they are invisible to human beings. There might be a terrific one going on around us now and we'd never know it unless we tried to telegraph or happened to be watching an instrument known as a variometer."

Reporter: "That doesn't seem to agree with what happened the other night. They

say that the storm cost the electric companies millions of dollars for repairs."

Ogden: "That's true enough, but the actual damage in a magnetic storm is done by electric currents known as earth currents. They're the criminals that burn out instruments, fuse wires, and set buildings on fire."

Reporter: "Earth currents, eh? Where do they come from? Remember, we've got to write this so that the ordinary newspaper reader can understand it."

Ogden: "I know you have. I'll do the best I can. There is a close association between electricity and magnetism. We don't know what either of them is, but they're undoubtedly pretty close relations. For example, it is absolutely impossible under any conditions to have an electric current flow in a conductor without producing what is called a magnetic field all around it. That's true even if the conductor is a piece of straight wire. Well, the other end of the proposition is true, also. A magnet in motion produces an electrical field. You fellows have seen electric generators, haven't you? All a generator is fundamentally, is a magnet in motion. That's what lights your houses and runs your street cars.

"Now get this next thing right. The surface of the earth is always covered with a blanket of negative electricity. The earth is surrounded by a great magnetic field. It may be a great magnet itself. When something unusual intensifies magnetic activity, we have what we call a magnetic storm. Electric currents are generated in the earth presumably proportionate in intensity to the magnitude of the storm. They run wild and the electric companies may have big repair bills."

Reporter: "That doesn't sound so complicated. I guess we got that all right."

Ogden: "It sounds a lot simpler than it is. When you try to go a little deeper, you find that it's something else again. It's probably the earth's greatest mystery—terrestrial magnetism."

Reporter: "We're game, Professor. What's so mysterious about it?"

Ogden: "Well, in the first place, the magnetic north pole isn't anywhere near the geographical north pole, as it would be supposed. It's on a projection of land at the top of the American continent. It was located by an Englishman, Captain J. C. Ross, in 1829. It's been about there ever since, though it keeps moving around all the time—jumps as much as seven miles in a single day, sometimes."

Reporter: "You're kidding us, aren't you, Professor?"

Ogden: "I'm not kidding you and don't call me professor. If I told you all the funny things we know about the magnetic poles, you wouldn't believe me."

Reporter: "Go on and tell us some of them."

Ogden: "Well, how's this for a starter? The south magnetic pole is in the ocean south of Sydney, Australia, and seventeen hundred and fifty miles from the geographic south pole. A line between the north magnetic pole and the south magnetic pole would pass at least seven hundred and fifty miles from the center of the earth.

"Now this may be a little technical for some of you boys, but listen carefully. The angles that the magnetic needle makes at any place with the geographical pole is called the declination for that place. A magnetic needle freely suspended doesn't lie parallel with the earth, even at the equator. It points downward. The angle it makes away from the horizontal is called the dip for that particular place. The intensity of the force, the declination, and the dip are known as the magnetic elements for any particular locality. The U. S. Coast and Geodetic Survey publishes maps showing all the places where the elements are the same, connected by curved lines."

(Ogden notices that the reporters are looking a little bored.) "You boys look as if you thought that there wasn't anything very exciting about all this. I assure you there is. Suppose I told you that the earth breathed regularly, like an animal?"

(Reporters wake up and a number of them begin making hurried notes.)

● Ogden: "Wait a minute, boys; suppose we put it this way. Those magnetic elements keep changing in the most remarkable manner. The declination changes from century to century, from sunspot period to sunspot period, according to the moon, from day to day, from morning to afternoon. Run a line by compass in the morning and again in the afternoon. The second time, in a mile distance you may find a variation of twenty feet. This is when the earth is well. Sometimes it gets sick—has a fever, and then we get magnetic storms."

Reporter: "You say people have been to this magnetic pole and seen it?"

Ogden: "A number of men have been to Cape Adelaide, on the western shore of the Boothia Peninsula, since Captain Ross was there, but nobody has seen anything. Amundsen spent two years making observations on the spot. The Canadian Government kept an observer on the peninsula for a number of years. He was Major L. W. Burwash, the man who discovered that the pole jumped as much as seven miles in a day. When he got back, he didn't know much more about what it really is than you or I do. The only thing that he was sure of was that whatever it is, it's far down in the earth."

Reporter: "You said in your announcement to the papers that you had discovered a connection between the magnetic storm and whatever it was that killed those thousands of people on August first. That's the thing the public is most interested in, Professor."

Ogden: "I realize that. I'll show you what I accidentally discovered and you can draw your own conclusions." (Unrolls a large wall map of the United States.) "I explained to you boys a few minutes ago what the declination of the compass means. Now of course, there is a line across the United States where the declination is zero. That is, anywhere on that line, the compass will point directly north without any correction. I'll show you where it is on the map." (He draws irregular line beginning at Savannah, Georgia, across South Carolina, North Carolina, Tennessee, Kentucky, Ohio, Indiana, Michigan and into Canada. Before he has finished, the reporters are crowding around in great excitement.)

Ogden: (when he can make himself heard above the deluge of exclamations and questions) "That's all I know about it, boys. The line of zero declination is the line of destruction in the great catastrophe of August first. I don't know what it means any more than you do. There is only one theory more unreasonable than that the catastrophe had some connection with the magnetic storm occurring at the same time. And that theory is that it had no connection with it!"

Reporter: "But what are we going to print in the papers? People aren't going to be satisfied to have things left that way. They'll think that if it happened once maybe it'll happen again somewhere else."

Ogden: "Maybe it will. I'm sorry I can't tell you more. There is one thing that you can publish. An expedition will start for the site of the north magnetic pole on the Boothia Peninsula as soon as preparations can be made. That expedition may learn nothing more than we know now. Again, something may be happening up there that will explain the tragedy of August first and show us how future ones may be avoided."

CHAPTER II

The Expedition to the Pole

● I do not know when the idea of the expedition to the north magnetic pole occurred to Ogden. His announcement to the reporters was the first I had heard of it.

It was headlined by the papers and great pressure was brought to bear on him to start almost at once instead of waiting until spring. This would mean that he would have to winter in the Arctic. He had no objection to this, if a suitable ship could be procured.

It was then that the Carnegie Institution in Washington offered him the *Car-*

negie II, which was nearing completion in a Bath, Maine, shipyard. The original *Carnegie,* famous as the only non-magnetic ship in the world, had been destroyed a few years before by a gasoline explosion. The new ship was being constructed as nearly like it as possible, entirely of wood, brass, and copper. The timbers were fastened together with bronze spikes. The rigging was hemp instead of steel. The cook stoves were of brass and copper, lined with brick. There were two anchors of bronze, each weighing nineteen hundred pounds, and the anchor chains were rope hawsers. All metal fittings, davits, and tackle were of bronze or copper. Cooking utensils were of copper and aluminum. Brass screws were substituted for iron bolts in the furniture.

Every bit of metal that came on board was tested by a magnetized needle suspended on a silk fiber. As in the original *Carnegie,* the only iron and steel on board were in certain parts of the auxiliary gasoline engine which was so distant from the magnetic instruments as to cause no appreciable effect.

The magnetic instruments were comparatively few and simple, identical with those in the magnetic observatories of the Coast and Geodetic Survey. The most important of these were three variometers, with a recording device technically known as a magnetograph.

No weapons were allowed on board, even pocket-knives being taboo. Belt buckles had to be of brass instead of iron.

Making all possible speed, it was October first before the *Carnegie II* was ready to sail from Portland where she had been brought for loading. Under any other circumstances, it would have been the height of imprudence to start for the Arctic that late in the year. We were practically sure to be frozen in short of our destination, though it might be at a high enough latitude so that we would be able to reach the Boothia Peninsula by sledge over the ice.

There are two routes for reaching the magnetic pole—a northerly one by way of Baffin Bay and Lancaster Sound and the southerly one, which we took. This leads through Hudson Strait into Fox Channel, which lies between Baffin Land and the Melville Peninsula—then through Fury and Hecla Strait separating Melville Peninsula and Cockburn Land. This strait is narrow and choked with islands. If we managed to get that far before the ice gripped us, we would be in the Gulf of Boothia, with our destination, the Boothia Peninsula, directly west. Five minutes' inspection of a map of Canada will make our course clear.

Ogden selected most of the men for the scientific side of the expedition from the laboratory force in Schenectady. In addition, there were two survivors of the original *Carnegie,* two scientists connected with the Coast and Geodetic Survey, and one from the Department of Terrestrial Magnetism of the Carnegie Institution at Washington. The Canadian Government at Ottawa detailed two men to accompany the expedition.

There were literally thousands of volunteers, many of whom were willing to pay for the privilege of going. It was impossible to take more than half a dozen of these who happened to have special qualifications which would make them useful.

It was necessary to go to Scandinavia for most of the crew. The New Englanders who knew anything about sailing vessels were too old to stand the hardships of an Arctic winter. For a number of years, a Swedish ship-owner had been running four-masters carrying grain between Australia and England. They were manned by youngsters who shipped at no wages for the sake of adventure. These boys were the kind of material Ogden wanted and, when we sailed, made up most of the crew.

There is not much to tell about the early part of the voyage. Unexpectedly, warm weather persisted and we encountered little floating ice until we reached Fox Channel. Even here, the ice was not heavy enough to interfere with our progress. To save time, we had made no landings up

to this point. However, Ogden was anxious to find out what effect the magnetic storm of the previous August had had in this territory comparatively near the magnetic pole. The charts showed a settlement on Melville called Itibleriang.

After some difficulty, we located the tiny cluster of Eskimo huts with its fur trading post and Catholic mission. The Jesuit missionary and the fur trader, with all the natives, were assembled on the beach waiting for us when we landed. But they had not much information to give us. They agreed that something unusual had happened on the Boothia Peninsula the previous summer, but they were vague as to what it was. They had heard reports that the considerable permanent Eskimo settlement at Cape Adelaide, the site of the pole, was now deserted and that the Eskimos refused to approach the locality.

This stop delayed us half a day and we pushed on with the auxiliary engine toward Fury and Hecla Strait. The unseasonably warm weather was over. Now the sun appeared above the horizon for only a few hours each day. For seven weeks, from the latter part of November, it would not appear at all.

It was growing dark as we approached the strait; still we could see snow-covered mountains, apparently between five and six thousand feet high. We anchored to wait for the few hours of daylight to pick our way among the inadequately charted islands.

A Mysterious Storm

● I was busy in my cabin during the early part of the evening, transcribing Ogden's notes. I got through about ten o'clock and went on deck for a few minutes before turning in. I saw immediately that something unusual was happening. Ogden had gone to bed, but I had him awakened.

There is something very mysterious about a magnetic storm. We know from our instruments that it is all around us, with forces involved that make the worst tornado or hurricane a summer zephyr in comparison, but we are scarcely conscious of it. It is almost as if it were taking place in a fourth dimension.

As far as I have been able to determine, there is not in existence any account of such phenomena as we observed that night in the mountains which were visible from the ship. In fact, a rather extensive search has not revealed any account of the actual phenomena of a magnetic storm, apart from the destructive effects of the electric currents generated in the earth.

By this time, we had got used to the auroras, which were rather disappointing in their sameness—pale greenish-yellow streamers, like the beams of ineffective searchlights.

Now we gazed at an aurora different from any we had ever seen or imagined. Great flashes of green, red, and orange pulsed from behind the mountains to the zenith. With the stars shining through in scarcely diminished brilliancy, the sky looked like a curtain in some immense theater of which the snow-covered mountains formed the front of the stage. Ogden must have had the same thought.

"Looks as if it ought to open up and let us see what's behind," he said.

We watched the colors become more and more vivid. From time to time, we made hurried trips to the magnetic instruments below. They were doing extraordinary things, such as the needles of the compasses whirling around through three hundred and sixty degrees. Further than to see that the recording apparatus was working properly, we paid little attention to them. We could study afterward on the recording film what had happened.

By this time, there was no question but that we were in a magnetic storm of the greatest intensity, probably equal to the record one of the previous August. It was about eleven o'clock when I saw the first of what I shall call "fire-balls" for want of a better term. It was a thousand feet or so up the side of a mountain and I thought at first that it was the light of a fire made by some wandering Eskimos.

If there is any subject about which

scientists know less than they do about terrestrial magnetism, it is ball electricity in its various forms. Whether it is a luminous globe of phosphorescent light floating over a marsh, or a ball of bluish fire rolling along a ship's spar, or in its more terrifying form of a radiant explosive sphere in an electrical storm, it is equally beyond the bounds of rational explanation.

We were anchored half a mile off shore and the mountains were some distance inland. Of course, the size of any radiant object at night is deceptive, but those of us who watched the first fire-ball and those that followed agreed that they were from six to ten feet in diameter. Making all possible allowance, they were immensely larger than any of which I have been able to find record.

The first one I had observed rolled slowly up the mountain and disappeared over the summit. A moment later, two more appeared and slowly followed the first. Before they had reached more than halfway to the summit, others began to appear in great numbers, as if they were coming out of the ground. I started to count them: At first, there were eleven in sight at one time. A few minutes later there were forty-five. After that, they appeared so rapidly that it was impossible to count them. They rolled up the mountainside like balls from gigantic Roman candles.

I stayed on deck until four in the morning. By that time, the brilliant colors of the aurora had faded and the fire-balls had stopped rolling up the mountain. I went below and looked at the variometers. They were now behaving normally and I turned in.

CHAPTER III

An Arctic Winter

● I was awakened by the vibration of the ship as it crunched its way through the floating ice. When I went on deck, there was no sign of open water. Evidently, the Arctic winter had arrived. It was hard to tell where the snow-covered land to the north and the south began. The pale watery sun was barely above the horizon.

If we had been forty-eight hours later, in the opinion of Captain Sorensen, we would have been frozen there in Fury and Hecla Strait. As it was, we succeeded in reaching Lord Mayor's Bay on the eastern side of Boothia Peninsula. We were lucky for two reasons: Lord Mayor's Bay is sheltered and we were not in danger of having our ship crushed in moving ice. And if we had been frozen in anywhere else, Ogden probably would not have been within a few miles of the magnetic pole on December eighteenth.

As soon as we had built huts on shore and got things shipshape for the winter, he announced that he was going to make a preliminary trip across the peninsula to Cape Adelaide to investigate actual conditions at the site of the magnetic pole. We had brought with us from Itibleriang, six Eskimos with their dogs and sledges. Besides furnishing us means of transportation during the winter, we expected them to hunt seals and caribou to keep us supplied with fresh meat.

Ogden wanted to make a survey of the ground before he made plans for our winter work. He selected me to accompany him and two of the Eskimos with their sledges. I looked at the thermometer as we were starting and it registered twenty below. The sun had disappeared for the seven weeks' vacation that it takes at seventy degrees north latitude, but it is always light enough to see in the Arctic. During several hours of the twenty-four, there is more or less reflection from the sun below the horizon. The rest of the time, light reflected from the ice and snow makes objects visible some distance away. It is never dark in the sense that it is at night in the tropics.

Our two Eskimos knew the way, which saved us a good deal of time. The magnetic compass standing on its head and pointing nearly straight downward is useless as a guide.

Presently, we noticed that the Eskimos were puzzled about something. Several times they stopped the dogs and met for a consultation. Then the dogs got restless

and needed continual urging to travel in the right direction.

"Something's wrong," Ogden said to me. "We'd better find out what it is." He called Itquilik, one of the Eskimos who, mission-trained, spoke good English.

"What's the matter with the dogs?" he asked.

Itquilik shrugged his shoulders. "Mebbe something funny at Cape Adelaide. Dogs afraid."

"What do you mean by something funny?"

"Can't tell yet." He waved his arm around the desolate horizon. "Everything gone. Eskimo houses but no people."

Up to this time, Ogden says, he had not the slightest idea of the extraordinary conditions that we would discover in the next few hours, and certainly none of the rest of us had.

The first indication was the rise in temperature. I found myself in a dripping perspiration under my furs, and getting clothes wet is the first thing one is taught to avoid in the Arctic, as it is practically impossible to dry them. I glanced at Ogden and saw him strip off his gloves and wipe the perspiration from his face. At the same moment, the Eskimos, who were a few hundred yards ahead, turned their dog teams and raced back toward us.

"What's the matter now?" demanded Ogden.

Itquilik silently pointed westward. Abruptly the snow ended in what we now saw was a fog of steaming vapor.

"No more snow," he said. "Summer come."

"Summer come in December!" exclaimed Ogden. "You're crazy!"

I took off my fur coat and found that the air was warm and had the spring-smell of moist earth.

A moment later Ogden followed my example. He stood looking toward the snowless area ahead with a puzzled frown. There was not much to see because of the swirling fog. Meanwhile, the snow around us was rapidly melting.

The Great Change

● Ogden hurriedly unpacked a thermometer. That morning it had registered twenty below zero. Now it stood at fifty-five above and was climbing.

"What do you suppose it means?" I asked.

He grinned. "Something pretty exciting happening over there around that magnetic pole, I guess, and we'll be right on the spot."

"How are we going to get there?" I asked practically. "No snow, no sledges. We can't get there and back without supplies."

"People travel up here in summer. We can pack enough on the dogs."

"Look at them," I answered. "They're frightened to death and so are the Eskimos. I'll bet a dollar to a dime that we can't make them go another step."

The Eskimos didn't waste time even discussing the matter. They were returning to the ship and there was no way of persuading them to go on. However, Itquilik was an intelligent man with a sense of responsibility toward us. He tried to persuade us to return with them, hinting at dangers which he either couldn't or wouldn't define.

Ogden angrily ended the discussion by beginning to throw supplies from the sledges. In a few minutes, there was a pile on the ground that it would have taken half a dozen men to carry.

The fog had now enveloped us and the snow was trickling away in little rivulets, leaving the earth bare.

"What we tell men on ship?" asked Itquilik.

"Tell them that you ran away and left us," answered Ogden.

The Eskimo shrugged deprecatingly but he and his companion started the dogs. We watched as they pushed the sledges while the dogs pulled over the practically snowless ground until they were swallowed up by the fog.

Ogden turned to me. "We'll cache most of the stuff here. We can carry enough to keep us going for a week, easily."

"What do you suppose Captain Sorensen will do when the Eskimos get back with the news?"

"Bring the ship around the peninsula to Cape Adelaide. The ice will melt pretty nearly as fast as the snow in this temperature."

An hour later we started in the general direction of the magnetic pole, each carrying a pack containing food as well as our outer fur garments, on the chance of its turning cold again. The rest of the stuff we had covered with a cairn of stones which we would be able to see from some distance. The fog had grown thicker and we could not distinguish things more than half a dozen feet away.

Ogden carried the dip compass which we intended to use to determine the exact location of the pole.

The Boothia Peninsula is largely composed of Archæan rock, and the melting snow and ice had left little mud for us to tramp through with our heavy packs.

We were both rather excited and walked as rapidly as possible in spite of the constantly increasing temperature. We did little talking. I had learned that when Ogden was thinking about a problem, he did not want to be distracted by conversation. I judge it was about an hour after we had started from where we had cached our extra supplies when he stopped to examine the thermometer.

"Ninety-five," he said. "Been going up ever since we started. Damn this fog."

"The wind's bound to drive it away soon," I said. "It's getting higher all the time."

"Wind!" exclaimed Ogden.

Something in his tone made me stare at him as he listened to the increasing tumult which sounded more like a Dakota blizzard than anything else I could think of, though there was not a breath of air stirring immediately around us.

He was standing there with his gaze fixed on the dip compass, the needle of which was jumping around like an eel, when the fog lifted, almost as if a curtain were instantaneously drawn aside.

CHAPTER IV

Behind the Fog

● I have put off as long as possible getting to this point in my story, because I have no idea how I am going to describe what we saw when the fog lifted so that it will give an adequate notion of the reality. It was only afterward, when we concluded that what was occurring on the Boothia Peninsula was the same kind of terrific convulsion that we call sunspots when we observe them on the sun, that we were able to form a picture of it ourselves. If we had been in a plane at a considerable elevation, so that we could look down on the scene, it would have been different.

Remember, it was the Arctic night and rather darker than it usually is in these latitudes, because the snow had melted and there was no reflection from its whiteness. I think that the intense blackness of the great chaotic whirling mass sweeping toward us added immeasurably to the feeling of panic it inspired. The vortex—which I call it for want of a better word—probably rose through the crust of the earth not long before the fog lifted.

At first, it looked to me a little like the dense black smoke cloud which is given off by an oil fire, though that leaves out the impression of the stupendous menacing power which it conveyed even in those first few minutes. It rose from the ground in the shape of a waterspout of a Western tornado, spreading at the top into a funnel shape which covered half the sky. The noise, which at first had sounded like wind, rose into a shriek so shrill that we seemed to feel it rather than hear it, as if it set the tissues of our bodies vibrating. We could not see how high the vortex extended into the air, but it was certainly coming nearer. Suddenly, we realized that it was not moving like a tornado over the ground, but was constantly enlarging its diameter.

The heat now was like that of a blast furnace searing our faces. We could not have stayed much longer where we were, even if there had been anything to gain by

it. We decided to return to the ship as quickly as possible.

We covered the first two miles at a trot, though sealskin boots are awkward things to run in. By that time, Ogden was pretty well winded and threw himself on the ground. The vortex was still expanding, but we had apparently gained on it. The heat was not so intense, and to the east, we could see land still covered with snow.

Presently, the ground beneath us began to grow hot and we started on again. Late in the afternoon, a search party from the *Carnegie* met us.

No one slept that night. By morning, the ship was practically free of the ice, though the gulf was filled with broken floes. Already the water had begun to rise and the huts we had built on the shore were partially submerged.

The vortex, Ogden figured by a rapid triangulation, now projected over eight miles into the sky. During the night, its character had changed. There were occasional flashes of light from the interior of the mass which illuminated it as distant lightning does a cloud. From its summit, great streamers of orange flame flashed at intervals clear to the horizon. The sound which made our bodies vibrate in unison with it continued.

None of us thought of the significance of the rising waters until Ogden spoke of it in answer to a question that Wheeler, our ship's young doctor, asked. "Do you suppose the same thing's happening at the south magnetic pole?"

"Let's hope not," he answered. "If as much heat is being generated there as here, there's a good chance for the world's greatest catastrophe."

We all looked at him in surprise.

"What I'm afraid of," he went on, "is the melting of the south polar ice cap."

"Would that be particularly serious?" asked Wheeler.

"Have you any idea how much of our present habitable land it would put under water?"

"Why no," answered Wheeler. "I never thought about it. I don't suppose all the ice at the poles could raise the level of the oceans very much."

"Well, it's more or less a guess," said Ogden, "but the level of all oceans would probably be raised from sixty to a hundred feet. Maybe more. That means all of Manhattan south of Columbus Circle would be submerged."

"Gosh!" exclaimed Wheeler. "What would people do?"

"I guess they'd move to higher ground," answered Ogden. "At least those who heard about it in time. Most of the Pacific island populations would be drowned."

"There oughtn't to be much trouble warning everyone in time, with modern methods of communication," suggested Wheeler.

"Unfortunately, modern methods of communication would be out of commission. There's no radio, no telegraph, no telephone as long as that continues." He nodded toward the menacing black mass towering to the sky and nearly filling the western horizon.

The Beginning of the End

● Before the channel was clear of ice, the winds had become of cyclonic force. They rushed toward the vortex over the pole with a velocity of between fifty and sixty miles an hour. The cause of this we did not understand then and know nothing more about it now. It was as if the whirling mass were a gigantic funnel reaching into the sky with a vacuum in its interior.

These winds gave us a serious problem. Our auxiliary engine was of comparatively low horsepower, and it was a question whether it could hold the *Carnegie II* on her course against the wind pressure. There was nothing for us to do except risk it. The temperature of the water was increasing rapidly and each day the vortex was a little nearer as its diameter increased.

Captain Sorensen decided that it would be impossible to take the *Carnegie II* through narrow Fury and Hecla Strait where the winds would be funneled and there would be no sea room. That left the

northern route through Lancaster Sound and into Baffin Bay as an alternative.

Getting out of Lord Mayor's Bay was a ticklish job, but the engine proved to have just enough power to give us a margin of safety over the wind. Several times during the next few days we were nearly blown ashore when we encountered the winds sweeping down a Baffin Land valley, but the increasing depth of water from the melting ice each time saved us.

We were tossed roughly around when an avalanche from a six-thousand-foot peak precipitated itself into the sea just as we were sailing by. We saw gorges and ravines filled to their tops with raging torrents, making their way to the sea. Over many cliffs poured cataracts dwarfing Niagara.

Always before our eyes was the great black mushroom stretching to the sky, into whose top all the air on earth seemed to be rushing. Most sights, no matter how appalling at first glance, one gets used to, but this was an exception. It was not personal fear that made the members of the expedition move around with white, drawn faces, starting at any unaccustomed sound. They were used to danger and faced it cheerfully. It was the horror of the unknown menacing thing always before our eyes, like a continuing nightmare. The sound which we could now barely hear but which we felt like a toothache, probably had a good deal to do with setting our nerves on edge. It continued day after day, even when we were well down toward Davis Strait.

When we reached Baffin Bay, we saw the mountains of Greenland standing out bare to view for the first time in history. The ice cap had melted and was pouring down to the sea in raging rivers. The air over the rocks shimmered as it does on a hot summer day. As we sailed south, the gorges and canyons which penetrated the plateau became streaks of vivid green. The air was full of birds, though I have no idea where they could have come from so quickly.

There were a few settlements on the narrow strip of land between the plateau and the water. I presume these were inundated, though we did not land to find out. Most of Greenland is so high that no possible rise in the ocean level could affect it. The opposite Labrador coast was not so fortunate. We approached closely enough to see that most of it was under water. The inhabitants of the settlements doubtless had ample time to escape to the elevated interior, which was readily accessible.

We used our auxiliary engine continually, partly because speed was important and partly because there were no normal winds for sailing. Even when we reached southern Greenland, the wind still blew steadily toward the magnetic pole.

CHAPTER V

Back to Civilization

● We landed at St. John's in Newfoundland to renew our supply of gasoline. We had hopes of getting here some news of what had happened to the civilized world as the result of the cataclysm at the magnetic pole, but we discovered, as Ogden had prophesied, that all methods of communication depending on electricity had stopped functioning on December eighteenth. The inhabitants had received little news from the outside world since that time. They had observed the slowly rising water, but had no idea of its cause.

Here we met, for the first time, the attitude of skepticism which was to cause so much needless loss of life a little later. True, they argued, cable and telegraph lines were not working; radio communication was interrupted; power plants were out of commission; still, this sort of thing had occurred before as the result of magnetic storms—though never for more than a few hours. While inconvenient, it was not serious, they insisted. True, the weather was unseasonably warm and the tides higher than they had ever been known; but it was improbable that these things had anything to do with the phenomena we had witnessed on the Boothia Peninsula. And even if Ogden were right and all the polar ice melted, they said comfortably that it wouldn't raise the level of

the ocean enough to do any harm to Newfoundland. The great Earthspot in the north was doubtless only a volcanic eruption of unusual size and violence—and anyway, the Earthspot or no Earthspot, it was too far away to affect the Newfoundlanders.

So they argued and I have devoted so much space to their objections because they are the ones that Ogden met repeatedly in the course of the next few weeks, when he tried to warn the authorities of our own country of the coming danger. Newspapers refused to print the interviews he gave, on the ground that they might cause panic among people already alarmed about the strange things that were happening.

When we reached New York, we found conditions indescribably bad. Magnetic storms in the past had lasted for only a few hours. City officials were waiting, apparently, for disrupted communication and transportation systems to return to normal. If any intelligent effort had been made by the authorities to meet the conditions that the storm entailed, it had certainly produced no visible effect.

As day followed day and week followed week, confusion, instead of lessening, had become greater. It had been found almost impossible to run railroads without the telegraph. Only a few trains crawled slowly along the tracks and practically all of these were freights bringing food to cities that were not far from starvation at the end of the first week. Milk deliveries had practically ceased.

Automobiles and trucks had been of little use in taking the place of railroads because of the quick congestion of the highways.

With affairs in this condition, and rapidly growing worse, the authorities did not welcome Ogden's warnings when he reached the city that most of the Eastern Coast, practically all of the Gulf Coast, and a large part of the Mississippi Valley would shortly be under water.

In an emergency, the newspapers print what they are told to print and suppress any news they are told to suppress. Nothing was published that would have enabled at least a portion of those who became victims of the catastrophe a few days later to escape.

The crisis was much worse and came more quickly than Ogden had predicted. Instead of a continuation of the gradual rise in the level of the oceans, there came a severe northeast storm. The water of the bay was already on a level with the Battery and the down-town streets of New York. When great waves began to roll over Battery Park, it was at first thought that the storm had coincided with an unusually high tide.

To understand what happened, it must be remembered that approximately one-third of the territory of the United States east of the Rocky Mountains is under six hundred feet above sea level. The highest point on the Atlantic Coast south of Maine is Todt Hill on Staten Island, four hundred and thirty feet. This is nearly twice the elevation of the next highest point in Greater New York. Lower Manhattan was inundated at the first onslaught of the storm; Bowling Green was twenty-two feet, Union Square forty-six feet, and Columbus Circle eighty-seven feet above sea level.

As nearly as we have since been able to determine, a great wave sweeping from the Antarctic met the flood from the Arctic about the latitude of Cape Hatteras. Wildly extravagant estimates of the height of this Atlantic wave have been made, and it is impossible to determine the truth. As I said, it was accompanied by a northeast storm when it reached New York; or, as is more probable, what we called a northeast storm was one of the phenomena caused by it. What is certain is that after the violence of the onrushing flood had subsided, sea level was between five hundred and fifty and six hundred feet higher than before.

Where the excess of water came from and why it came as a tidal wave instead of a gradual rise to correspond with the melting of the polar ice caps, is one of the problems science still has to solve.

The Last of Manhatten

● Most of the scientists in our exploring party had gone to their homes, but Ogden and I were staying aboard the *Carnegie II*, which was anchored in the North River above 181st Street. The great masses of steel in the Manhattan sky scrapers made magnetic observations difficult even that far north.

Fortunately for us, the tidal wave swept over the city between seven and eight in the morning. The members of the crew who were permitted to spend their days ashore, were still aboard. I was awakened by the wind and went on deck about six o'clock. The river was rising rapidly, but it did not occur to me that the rise was due to anything more than the northeast storm which could easily pile up the water, particularly as it was the time of month for high tides.

I wakened Ogden and suggested that there was apt to be rescue work to be done in the lower part of the city.

He agreed, and it wasn't long before we were on our way down the river. As it happened, that was the thing that saved us and the *Carnegie II*. If we had been anchored when the tidal wave rolled over the city, we wouldn't have had a chance.

The ship had reached the vicinity of Forty-second Street. Ogden and I had climbed to the crow's nest and from that height were gazing anxiously down the river. The wind was blowing with terrific force. The river was nearly free of traffic, except for an occasional ferryboat battling the gale.

We were miles from the open sea, separated from it by Staten Island on one side and Long Island on the other. What we experienced would undoubtedly have been much more terrifying if the giant waves had not spent their greatest force before they reached us.

It all happened very quickly. At first I thought that the great dark masses rolling toward us with incredible speed were clouds.

"Must be a hurricane," I said, bracing myself. I don't think I realized they were water until the first one arrived, somewhere about the Battery. Even then it didn't look like a wave. I've seen a fog roll over a place just that way. It had no crest. It was like a rounded mountain sweeping toward us. Behind it was a higher one and behind that again others, seeming to fill the whole sky.

There was no time to shout to the man at the wheel, but he must have seen what was coming and figured that the only thing to do was to keep to the channel.

It isn't worth trying to describe exactly what happened in the next few seconds, because neither Ogden nor I know. The last thing I remember is seeing the buildings of Manhattan disappearing under a dark veil, and then the crow's nest swung down until I thought we were going to the bottom of the river. There was a violent swing up, followed by another plunge. I have no idea how often this was repeated. I was seasick and I had never been seasick before in my life. I remember thinking that the mast would be torn out of the ship.

Gradually, the oscillations became less violent. I saw Ogden pick himself up from where he had been thrown.

"All right?" I shouted to make myself heard above the wind.

He nodded. I gazed down at a raging gray sea. There were mountains rising from it, but there was nothing in sight that I recognized.

We climbed down to the deck. Captain Sorensen and the first mate were at the wheel and the engine was still running. We had been headed downstream during all this time. I don't pretend to understand why the *Carnegie II* was not swept around broadside to the flood and sunk. Persons who know more about ships and Swedish seamanship may.

Three of our crew had been lost overboard. The boats and most of the superstructure had been smashed, though only the first of the waves had come aboard. We had ridden the others, thanks to the buoyant construction of the *Carnegie II*. She had been built so that she would not sink if either her bow or stern were crushed in an ice pack.

(Continued on page 1172)

(Illustration by Winter)

I drew the revolver that I had taken and aimed at the tires of the truck.

THE TONE MACHINE

By CHESTER G. OSBORNE

● Clever scientists have spent their lives devising and developing new and terrible weapons. Many things that have been discovered during times of peace for peaceful uses have been destined to cause havoc.

It is a well-established fact that sound vibrations have mysterious qualities. Vibrations of the correct pitch have destroyed various materials completely by disrupting them. This is not fantasy.

In this story, it is logically proposed that sound may be able to cause emotions within the human mind. This idea provides a thrilling tale with breathless action.

● A weird, soft light from an Oriental lamp in the far corner of the room was the only break in the gloom. His tigrish features silhouetted against the light, his long, slim fingers working with serpentine skill at the tall cabinet, Wuan Tsen seemed like a picture on some rare old tapestry.

I grasped Barbara's hand in the darkness and smiled into her incredibly beautiful face, set off by wavy dark hair. She nodded her head in the direction of our Chinese friend to call my attention to him.

Wuan Tsen's face was a mask, as usual. "The experiment is about to begin," he said. "I myself do not know for certain whether it will work. If it does, then may I thank you, Alan Carter, for providing the financial aid, and you, Barbara Smythe, for your encouragement. I think that you will be fully rewarded."

His slim fingers touched a dial on the finely carved cabinet near the lamp. A tone, soft and velvety, as compellingly gorgeous as a moonlit sky, flowed into the dim room. It rose and fell like the waves of a beautiful sea. It seemed to grasp me, gradually led me from my surroundings into a phantasmal space, where unreal things took shape and vanished. A warm feeling of comfort stole into my veins. Then I began to feel a strange rapture, so intense that I grew weak. For a brief time, the ecstasy continued. Then it gradually subsided.

The chamber took shape again, and I saw the tigrish face of Wuan Tsen before me, and felt Barbara's hand in mine . . . . the tone had died away. The lamp was still glowing; all was the same.

"Magnificent," I spoke at last. "It is as powerful as a drug. You have succeeded in tearing from Nature the secret of the effect of sound. You are a genius!"

Wuan Tsen bowed, his face still expressionless. "There is no doubt but that we have here a great invention, my friends. Just why certain tones or sounds affect the brain in different ways is no longer a mystery. I understand now why a 'cello has depth of expression, a trumpet a martial feeling. And I have incorporated my discoveries in this cabinet; in this tone machine.

"With this I can reach into the human mind *via* the auditory nerves and cause any emotional reaction. I could throw you into a spasm of terror, or make you frantic in anger. Obviously, my work must be kept secret.

"Unscrupulous people might want to further their own interests with it. The machine is dangerous if ill-used. I can trust you to keep perfect silence?"

We assured him he could, and made ready to go.

"I didn't want to say anything about it, but when we came in here, there were sev-

eral suspicious-looking men hanging around outside," spoke up Barbara.

"Probably just a couple of bums," I said. "They could never get in here, past that bunch of laundrymen in the shop downstairs."

Wuan Tsen touched his long moustache with his slim fingers.

"Anyone who tries to penetrate these hidden quarters, my friends, will be in more danger than I. Good night."

"Good night."

We passed through a narrow door into a storeroom which was filled with empty packing boxes, and thence down some stairs.

"Who could possibly buck against Tsen and his tong men?" I wondered. "He is one of the strongest men in 'Frisco."

"Any gang leader would fight him to get that machine, I should think," replied Barbara as we went through the squalid little laundry that hid the Tone Machine, and the strange apartment of my friend, Wuan Tsen.

The darkened streets of the greatest Chinatown in America were almost deserted now, at midnight. There was a lone car turning a corner, and a man, his overcoat pulled up to cover his face, leaned against a lamp-post a few yards away.

"We'll pick up a cab some place," I said. "Too bad we couldn't have brought my car tonight, but it is too easily trailed because of its expensive appearance. Having plenty of money isn't an asset here, is it?"

"That's all right," said Barbara. "Is that a cab coming now?"

I turned. The car that had just turned the corner was pulling up along the curb ing. I grew suspicious at once. "Run for it," I yelled. "It's a trap!"

I grabbed her arm, started to run. There was the bark of a pistol. Fire seared my right leg. I stumbled and fell. In a second, three men were upon me. I couldn't hope to throw them all off. But three more had grabbed Barbara. I struggled, but couldn't rise or free my arms.

"Let go," I cried. "Help!" Then something slammed the back of my head. Burning pain and darkness. I felt vaguely that I was being carried, sensed the rocking of a speeding car, then all went completely blank.

I awoke with a splitting headache and a numbness in my right foot. Through a mist I saw that I was in a small windowed room. Fields were outside; men crowding around.

One of them was familiar. "Lefty" Saunders; bootlegger, racketeer, murderer, confronted me. I had seen his pictures in cartoon and photograph as the most notorious of the criminals in the country. His scarred face bent over me. "Well, mister, didn't like the rough treatment, eh?"

"Where's Barbara? What have you done with her?" I cried.

"Now rest easy, pal, all you have to do is just tell us what we want to know and we'll set you free."

I looked around the room. There were six of them, and not a sympathetic face in the lot. I shrugged. "How do I know you will?"

"You'll just have to take our word," leered Saunders. "What's old Tsen got up there that he guards so and took so much of your dough, Carter? Come on, out with it."

"None of your damned business," I spat. "And—"

"Oh, won't talk, eh? Well, you'd better, or we'll give your lady friend something that'll make her tell, and tell plenty. A branding iron, f'rinstance. How's that?"

● I felt myself pale. Barbara must be in some other room. But I had sworn myself to secrecy. A scream, Barbara's voice, interrupted my thoughts. I sprang to my feet. Saunders jammed a gun into my ribs. I sat down again.

"You lousy rats!" I yelled, "You cowards, why don't you do your torturing to me?"

"Just talk, and we'll let you both go."

I had no choice. "It's the Tone Machine," I said in desperation, "an invention that can make anybody who listens to

it happy, or sad, or afraid, or feel any emotion the operator wants. Kind of glorified music, or something. Now can we go?"

"Wait. How can we get in to get it?"

"It's in a back room, in back of the Woo Hang laundry."

"Any back way?"

Betraying my friend was hard. I bit my lip in anger. Lefty's eyes narrowed.

"Well?"

"Yes." I looked up. "Do we go now?"

The gang leader chuckled. "Go on boys, tie 'im up, thorough, too."

I saw red. I rose with clenched fists, helpless, tricked. Lefty's gun was leveled at me. I sat down again. In a few minutes, I was securely trussed up, and shoved into a back room. Barbara was tied and gagged in a chair there.

In a few minutes, we were alone. A motor started outside. Wheels ground in gravel. Then all was still. As I was being tied, I had expanded my muscles and chest, so that now, when I relaxed, there was a bit of give in the ropes. I turned and lay face down. The gag was tight. I wormed across the floor, my mouth pressed to the floor. Then what I hoped for happened. The cloth gag caught in a splinter and ripped. I cried out as it dug into my lip. But then I moved again.

Once more the cloth tore. In a minute, the cloth fell to the floor. Now I rolled across the floor to Barbara. "Tip the chair so that you'll fall to the floor," I said. "Hurry!"

She obeyed, shifting her weight from side to side until the chair fell. Now her bound hands were within reaching distance of my teeth. I bit at the ropes and knots. A second later, I felt a familiar knot and tugged at the key end of the rope with all my strength. The knot loosened, and soon she was ripping the gag from her mouth and undoing her feet. Then she untied me, and we stood cautiously, waiting for some alarm. None came. Perhaps half an hour had elapsed.

I peered through the keyhole. There was a man walking around the outside of the house; the guard. I seized the chair, opened the door, and crawled along the floor until I was directly under the window sill. It was open. I listened. Footsteps. He was coming and I watched cautiously.

Just as he passed, I swung the chair down with all my strength. It struck him squarely on the head, and he fell out cold. I leaped through the window, fished his pockets and got his gun. No one else was in sight. I called to Barbara. We walked swiftly from the house to the main road. We hailed a passing auto, and with the excuse that our car had broken down and the aid of a ten-dollar bill, we got a ride back to town. The lone driver looked at my wounded leg curiously, but said nothing.

At my home, I bandaged my leg. I wondered if the gangsters had reached the rooms of Wuan Tsen. We must hurry down. I took my car this time, and in short order we were outside the laundry. There was a crowd, and policemen were giving orders. A man lay sprawled in a pool of blood in the street, face down. I could not see whether he was yellow or white.

I broke hastily through the crowd and dashed up the stairs. Wuan Tsen lay on the floor, and the Tone Machine was gone. A doctor was bending over the old Chinaman. A policeman was on guard. They looked up at me and I told them that I was a friend.

Wuan was still alive. As he looked up at me, my gaze fell. "I had to," I said brokenly. "They were torturing Barbara."

He nodded. After a while, he struggled to his feet, despite the protests of the doctor. His side was bandaged. "You should have kept still, no matter what they did, even had they killed her. I told you that it was a dangerous machine. With those criminals in charge of it, the Almighty alone knows what will happen. We, everyone, the police, even the soldiers, must search for them."

I paled. His tone was sinister.

The policeman looked curiously at us. "What is it, anyway?"

"You will find out," said Wuan Tsen.

"You had better come to my place. Yours is wrecked," I said.

"We start now, looking for the machine. We will go to the place where you say you were taken prisoner. I hope that we may not be too late."

At once we stopped. A faint sound came through the air—a weird, fearful sound. It grew louder, filling the very heavens. It was terrifying and my heart thumped even as I guessed: the Tone Machine!

"It carries for miles, if adjusted correctly," said Wuan, and his face registered as near to an emotion of fear as I had ever seen.

The sound seemed to grow more powerful. I was in a quaking terror as I thought that the end was near. I fell to the floor, covered my ears in vain. If before I had been in ecstasy by the machine, now I was in the grip of the most violent horror imaginable. I shook; I cried out.

A Dangerous Weapon

● And then it stopped. I was still cowering in a corner. So were all of the others in the room, even Wuan Tsen. It was a minute before I could speak. "Is—is there no means of escaping that sound?"

Wuan shook his head. "It can carry for five miles. Unless you are outside of that range, all is futile; to resist, impossible."

"It must be within five miles of here now," I said. "Maybe . . . ."

Wuan Tsen touched his long mustache with his snaky fingers. "There is only one way to overcome that terror-tone."

"What?"

"Perhaps a sound-proof helmet that would not only cover the ears, but also the skull and face. Sound can reach the auditory nerves through the head as well as ears."

"It would take weeks to get such a mask. . . . How about a diver's helmet?"

"Perhaps. I wonder if Saunders and his gang can figure out a means of protecting themselves," Barbara wondered.

"Maybe," I answered, as we climbed into my car, "he will get the same idea that we had, about the helmets. We'd better put police at every place in town that sells them. Then when Saunders tries to get them . . . ."

"And if he goes out of town?" asked Wuan Tsen.

"We'd better just get helmets, and when the Tone Machine starts again, we'll trace it," I said. "Where can we go?"

"The factory is up the line," spoke Barbara. "We'd better hurry."

As fast as we could hit the road, I drove to the door of the diver's supplies factory, leaped out of the car and ran up the steps into the office. An astonished fat little clerk stuttered at me. "S-say, what is this?"

"Hurry up," I said. "I want all the helmets in the place. Quick. I am able to pay."

"A guy just came in here and bought them all except one," was the astonished reply.

"Then get me that." I wrote out a check for the amount and ran from the factory leaving the stammering clerk still gasping. "Here you are," I said to Wuan Tsen. "Take it."

"I am not useful with my injured side," said Wuan. "You are stronger than I."

I laid the helmet in the rumble seat of my roadster. Then I drove Wuan, at his request, to the home of a Chinese friend of his. After that, I sped to the police station. In a few swift sentences, I told the story to the chief. He listened gravely.

"I'll send out a dragnet for Lefty and his gang . . . ." He stopped suddenly.

An eerie sound filled the air again; terrifying, awful, growing more powerful every second. I wasted no words. The chief was cowering in abject terror. I leaped from the office, clamped the helmet on my head. I could hear no sound.

I started the motor in the car. People were running at top speed along the streets, a nameless fear on their faces, stark terror. Traffic was jammed. Then, in a few minutes, the streets were deserted as if some fearful plague had gripped

the world and wiped out everything. I stepped on the gas, and headed down through the main streets. A terrified dog scrambled in front of the car. I must have hit him, but had not time to stop.

● I lifted the helmet cautiously. The sound seemed louder. I drove on straight. It grew still louder. Reeling at top speed, the car swung around corners while I traced the sound. And then I jammed on the brakes. A car was stopped in front of a bank. Men in helmets were running from it, their arms loaded with currency in bags, and with heavy boxes. The streets were otherwise empty.

They did not see me. I followed them as they leaped into their machine. Evidently, the Tone Machine was in a truck in back of the faster gangster car. I drew the revolver that I had taken from the crook at the house and aimed at the tires of the truck. Missed!

Around corners at breakneck speed the truck sped, the horrible sound machine still running. At the docks, it stopped. I found the abandoned truck and car, while the bandits were far out in the bay in a launch.

I jumped from the car; my hurt leg buckled up under me. I picked myself up, adjusted the helmet. I watched the launch traveling fast in the distance. A motor launch near by offered a chance for pursuit. I could not hope to tackle the gang alone, but I could trail them without their knowing it, if all went well. I jumped into the launch. The motor roared to life, although I could not hear it because of my clumsy helmet.

Cautiously, I followed the launch. It was heading towards a big yacht out in the harbor. After some time, the gangsters boarded the other craft. I lifted the helmet. They had stopped the Tone Machine.

Other boats on the bay were coming to life now. I waited for nightfall behind an empty barge in my stolen launch. Tedious hours passed. I was hungry, tired; my wound hurt.

When I thought it safe, I motored to the yacht under cover of darkness. A rope ladder hung down. Revolver in hand, I climbed. At the deck I paused. There was no one in sight. Six helmets lay nearby, and not much farther was the carved cabinet of the poisonous Tone Machine. I leaped up, pressed the button on its side. The dial was still at "Fear."

In a second, the terrified gangsters were pouring out on deck. I herded them into a corner. There were five. Puzzled, I waited for the sixth. They were all scared to death, hardly able to do anything but shiver without their helmets.

Lefty was missing. Fearing little from the terrified men, I ran down below. Lefty was cowering in a corner. Suddenly he looked up. I pushed up the diver's helmet, listened. The noise persisted. I motioned him to get up and go upstairs.

There were lengths of rope on the deck. I cut them up and bound the men. To show the power of the spell they were under, two of these toughs had fainted. Lefty, I myself started to tie, when suddenly the gangster made a leap for the Tone Machine. How he ever conquered the terrifying sound, I do not know to this day, but he managed to start, anyway. I jumped after him, then fired. Before he could turn off the thing, I was upon him, wrenching away his hand. The tall cabinet was poised near the rail.

● Suddenly, a giant explosion shook the ship. A coast guard cutter had drawn close, and its forward gun had fired. I could see the men in divers' helmets on the deck. Somehow they had found the protection of the helmets. Another boom. This time, the yacht lurched, then sank.

I found myself swimming, then picked up by strong arms onto the cutter. I was quaking in terror, for the helmet had come off in my dive. But suddenly the sound stopped, as the yacht dipped and the fiendish machine fell gurgling into the waves.

THE END

(Illustration by Winter)

He drove furiously, yet carefully. It disturbed him to notice many other cars on the road, some returning, some going, some smashed and broken by the roadside.

THE GREEN CLOUD OF SPACE

By EANDO BINDER

● You will undoubtedly claim this to be Mr. Binder's best science-fiction story. You have read stories of plagues and scourges that wipe out the earth's population before, but this one is decidedly different. A tale such as this is what makes an editor's job a pleasure. The author creates a masterful ending to this tale, which will leave a lasting impression upon your memory. The last two pages are as powerful as an entire story in themselves. This is one of those tales which are so logical and plausible and human, that the reader lives with its characters and is oblivious of all else.

● "Eleven miles a second!" cried George Craft, his voice carrying a tone of incredulity.

"Exactly, George," answered Dick Palmer, his youthful companion, in whose laboratory the two were at the moment. Dick was busy before a table covered with glass retorts, beakers, flasks, and other paraphernalia, stretching the entire length of the room. It was unmistakably the workshop of a chemist and biologist.

He continued speaking to the other as he worked. "Not only that, but try to visualize the grand picture, presuming you were far enough away to see it all: the earth whirling around the sun at a mean rate of about eighteen miles per second; the other planets likewise with their respective speeds. And then the *whole* solar system, in all its inconceivable magnitude, moving rapidly around the center of the galaxy at a tremendous rate."

Dick turned toward his seated companion, a beaker in each hand, his eyes sparkling as his imagination vividly visualized the grandiloquent scene. George betrayed astonishment—and admiration.

"It must be wonderful to have an education such as you have, Dick, and to know and understand the wonders of the universe," said Craft, drawing in a deep breath. Since the youth standing before him had rented the large barn on his father's place eight months ago; he had been thrilled by endless wonders. Then, too, he had come to think Dick Palmer a prince of fellows. The young chemist, on the other hand, had taken to the quiet country lad and had found him enthusiastic, if somewhat unbrilliant, and a willing helper in detail that would otherwise have wasted much of Dick's time.

"Yes, it is wonderful, and then again, it's this very education that has cost me the loss of my home, my parents, and friends. Dad wanted me to follow in his footsteps in civic finance. When he saw my lack of interest in business, we clashed and had it out. I went my way and with what little money I had, equipped this laboratory. I have a small income from an estate my grandmother left me and it's just enough to keep me living and my lab going."

"Then your father disinherited you?"

"You guessed it. The heir of the illustrious Palmers was kicked out bag and baggage to spend his days as a 'putterer,' as dad put it. So here I am." Dick turned back to his work with a grin hiding whatever deeper feelings were aroused in thinking of his family troubles.

The other sat silent for a moment, then spoke up. "But, Dick, what can you gain by all this? You've thrown away a huge fortune, social prestige, and a lot of other things just to follow a hobby. Do you know, I think you're stubborn."

Dick Palmer whirled from the table, his face reddened with a shade of anger. "Listen, George, that is exactly what dad threw up to me. Is that all people think about in this world—wealth and power? If so, I must be a misfit. To me it doesn't

mean a thing to have a lot of money, except as a means to an end. What does dad gain by acquiring a fortune? Nothing that in my mind is important. I told him, just as I'm telling you now, that if his wealth couldn't be used to benefit humanity, it was of no earthly good. If this thing is looked at in a light of reason, can you still call me stubborn?"

Again a look of admiration shone from George's eyes. Dick certainly stood on his own two feet. George was sorry he had ever credited him with stubbornness. He said so in as many words and they lapsed into silence. Then George spoke again.

"Then your theory, Dick, is that the strange epidemic of a year ago was caused by some dust-cloud or cosmic fog through which the earth traveled on its way around the galaxy, accompanied by the entire solar system?"

"Right." Dick's voice radiated confidence.

"Then, what is the use of experimenting any longer for a serum to cure this malady or trying to isolate the germ?"

At the young biologist's questioning look, he continued, "Since the solar system is rushing through space, the earth will pass beyond the cosmic disease-cloud in due time."

Little lines of tiredness appeared on Dick's face as he spoke. He had driven himself relentlessly the past few months. "George, there is one thing in particular that I want to bring out. You remember that the epidemic lasted only a short time; about four months it raged and then suddenly vanished. Yet in that period of time, its ravages were so deadly that people throughout the world died by the thousands. Now, my contention is that we had just a tiny taste of what may yet turn out to be a terrible catastrophe: a sort of warning of what could happen in a greater scale to this world as it speeds through the void. We—the whole world—do not take this seriously enough." Dick looked grave.

"How did you arrive at your conclusions?"

"Not conclusions, George — suppositions. Preparedness is my whole idea. The whole thing was entirely too short, ended too abruptly, to suit me. It made me think. Suppose by some chance that the germ-cloud that brought the epidemic was a mere offshoot, a small portion of an original cloud that may be a thousandfold larger. If so, then sooner or later we will strike this death of the void in its full strength on the roadway of space. It may be waiting for us like a crouching tiger. Just think what it would mean if we passed through a germ-cloud that lasted not four months, but several years! Think of it—more than 2,000,000,000 corpses in a round coffin!"

George Craft paled. The horror of the thing struck him speechless. He suddenly realized that the man before him was not a mere "putterer." Apparently, he alone of earth's vast population thought of a grim, tragic anti-climax to the mysterious plague of the previous year—the plague that had dumbfounded, terrorized the world, only to be smilingly forgotten when it died out of its own accord. And he had cast aside security and wealth to face a problem for which he would be labeled "fool," should the world hear about it.

Low Funds

● From that moment on, George Craft was Dick's slave. He would help to the limit of his ability in a cause that could have enslaved no Middle Ages Crusader's heart more than it captured his heart. Even when Dick emphasized the fact that the whole theory and all its pendent suppositions *might conceivably* be baseless conjecture, it shook George's inner resolves not in the least. Come what may, it was worth his effort, *just in case* the world was being waylaid by more of the plague. He had seen, himself, the ghastly green blotch beside the right ear of those who had been contaminated; the horror on the faces of those not marked with the sign of death, but who could not know when their turn would come; the pitiful stare of helplessness of those whose loved ones were afflicted, knowing that no earthly power could save their lives.

Those months of the plague had been Hell for the whole world. The best medical minds were stunned and powerless. Its origin and cure utterly defeated their titanic efforts to check the epidemic. A professor of Columbia University was the first to suggest the idea of the earth passing through a cosmic cloud of germs. But theories of origin helped not a whit to isolate the germ or cure the stricken.

And yet — George found it a curious thought — after the icy fingers of that ghastly green death had ceased clutching the world, all was forgotten. It was gone; sighs of relief echoed from pole to pole; and mankind firmly, joyously, put the dread thought of the now-extinct plague from its collective mind. It was over and forgotten, one of those events of history. All had forgotten, had been glad to forget—all except Dick Palmer, a youth who spent all of his hours trying to isolate the Green Germ from cultures he had preserved, and to find a serum to kill it.

It was several weeks after this that George Craft, having done his chores about the farm, dropped in to see Dick, as was his custom. As he stepped into the homely laboratory, he saw his friend's face agleam with exultation. Dick whirled about.

"George, I've got it!" he fairly screamed.

"Honest?" gasped George, stupid with surprise.

"So help me. A toxin from that sheep—you know. Inoculated yesterday. Mixed in my bacteriophage, threw it in the culture, and in ten hours it was absolutely nonvirile. Of course, the serum is weak. I should be able to produce one that will purge a human being, but—"

"But what?" asked George, surprised that the other should intimate hesitancy now that complete success was within reach.

Dick's face relaxed, and the tired lines reappeared. "It would take a good deal more money than I have at present. In fact, more than I can hope to get together. This is just a beginning. From these results on, I must gradually produce the true specific that will check the Green Plague's ravages on the human race, should it appear again."

"How much money will you need?"

Dick looked sharply at his friend. He knew that the Craft family, although comfortably situated, were not well-to-do. "Several thousand dollars," he said mechanically.

"What are your plans?"

"Simple under the circumstances, George. I can do perhaps a week's work yet before I need funds. Then—why, then, I suppose I'll have to go out and attempt to raise the money somehow, or perhaps maybe some medical institution will listen to me and boost me along."

But George could detect in his voice as he uttered the last thought, that such a possibility was remote. And then Dick, being young, having done a great thing, would like nothing better than to complete the work himself.

"Well, anyway," finished Dick, "I'll have to go out soon for funds or help of some sort."

"Dick!" cried George eagerly. "Let me do that! Let me try to raise that money. I want to help you—this is my chance!"

Dick, candidly, was startled. What connections could this poor country lad have? How would he ever—? He looked at his eager young face, aglow with enthusiasm. After all, it was no time to refuse aid, futile as it might seem on the face of it.

"That's splendid of you, George. You've been helping me immeasurably ever since I came here; if you can get that money—well, really—you're a swell friend."

"I can't promise you, Dick, but, by Heaven, I'm going to do my best."

They shook hands silently.

Then for many hours, they talked, the conversation hinging around the Green Plague. Dick told of other biologists who more than suspected that many earthly plagues originated in the void; a plague—like the terrible Black Plague of the Middle Ages—suddenly devastating the whole world. Wasn't it plausible to assume that they came from space, existed in huge

clouds into which the earth would plunge in its eternal fall through the ether? Or couldn't they spring from the many meteorites that ceaselessly bombard the world? Authorities, tracing the outbreak of the influenza epidemic, found it originated in the state of Kansas, a healthy state with plenty of sunshine, good weather, and blamelessly clean. Had a germ-laden meteorite fallen there and spewed forth the deadly influenza germ which had killed more Americans than the foreign armaments had American soldiers? There had been many other plagues and epidemics down through the pages of history that came swiftly and suddenly to leave behind a trail of corpses. Luckily, none of them had been of sufficient duration to wipe out humanity.

"But this Green Plague of our times," finished Dick, "somehow strikes me as something more vicious, more ultimately dangerous than any epidemic of the past. If it should return—if Earth should plow into a vaster cloud of that disease which is far more deadly than any previous one that has visited our world, mankind would become a memory. The lower animals would inherit the earth and all upon it. With the serum, however, we have at least a fighting chance. I thank a Higher Power that my puny hands and my unworthy brain have been the vehicle of Fate, preparing mankind for another siege of the Green Plague."

Admiration expanded and became worship in George Craft's heart. It had been his privilege to be the stick upon which the savior of the world leaned. Whether or not Dick Palmer would ever become the savior of the world, mattered nothing. It was the spirit of the act that counted.

CHAPTER II

Securing Capital

● Wesley Palmer looked up from his massive mahogany desk. Before him stood a young man. He seemed nervous and out of place in the splendor of the private office of the city's wealthiest financier. Slowly, the big cigar was extracted from his mouth as he carefully scrutinized the visitor.

"Well, young man, you must have imperative business at hand to be so persistent in wanting to see me. My secretary tells me that you wouldn't take 'no' for an answer. I'm a very busy man, so be brief." He folded his arms across the orchid-tinted blotter pad.

The visitor seemed at a loss how to begin. Taking a deep breath, he spoke. "Mr. Palmer, your son . . . ."

The man behind the desk leaped to his feet, grave concern on his face. "What's happened to him?"

"Why—why—there is nothing wrong, Mr. Palmer," stammered the lad, taken aback by the other's vehemence.

Wesley Palmer sank back into his chair and seemed to be aware suddenly that he had forgotten to breathe, for he took one vast breath before he spoke. "Go on, young man. What about my son?"

"You see, Mr. Palmer," began George Craft again, "Dick is on the verge of a great discovery. It is so important that it will make him famous forever. His research work in biology"—the cigar in Wesley Palmer's mouth was now traveling back and forth from one corner to the other furiously—"has resulted in great success. There should be no obstructions to his continued progress. He has worked without sleep for nights and all that—"

"Fool that he is!" burst in the business man. "Meddling child with his glass toys and poisons. My son—a putterer!"

George Craft lost his tongue from embarrassment, stared with flushed face at the man who could not see the true light.

"And it's money he needs?" growled Palmer after a racking silence.

"Y-yes sir."

"Did he send you?"

"N-no sir." This more firmly.

"He didn't!" bellowed the angered business man in disbelief. "Well, you tell him, whether he sent you or not, that he will not get one single cent from me until he stops that—that *puttering* of his and comes home. Why, the brazen nerve of him, sending you here."

"But he didn't send me, Mr. Palmer," George mustered up enough courage to say.

"I'll reserve my own opinion about that. Good day, young man."

But George Craft didn't leave. He was frightened, but suddenly anger — righteous anger—flooded him. "Mr. Palmer, you might be sorry for this some day!"

The other's head shot up. His cold blue eyes flinted angrily. His lips puckered to thunder words that came out like shells from a cannon. *"Get out!"* he screamed with the added emphasis of a heavy fist crashing to the desk.

That was enough for George Craft.

When he got back to the farm, he straightforwardly told Dick that so far he had been unsuccessful, without divulging, however, to whom he had gone with the quest. "But I'm not through, Dick," finished George hastily. "I'm going to keep on trying, and sooner or later I'll get a loan."

As he finished, an automobile horn blew. George looked at his watch. "Miss Nash is early tonight."

"How would you like to come along for a nice cool ride, George?"

"No, thanks. Three's a crowd. Besides, I still have some work to do before dark. Dad might disinherit *me* if I don't get those fruit trees pruned before the week is over." He ran out and waved to Miss Nash as he strode to the house.

Dick sank down in the soft cushions beside Dorothy Nash after exchanging greetings. She threw the car into gear and sped away from the barn.

"Where to, Dick?"

"No particular place, Dot. Just keep going where our noses point."

They sat in silence for a few miles. The girl understood. She was his fiancé of childhood standing and understood his moods. Dorothy Nash, whose family was as influential and wealthy as Dick's, strangely enough had stuck to him even after his disinheritance. Dick thought the world of her, especially now that she had proven her faithfulness.

Conversation started light and trivial as the car rolled along, but gradually Dick began to refer to his biological work, a subject that the girl showed her distaste for by maintaining complete silence.

Dick drew in his breath as a person preparing to plunge into icy waters. Then he spoke to her.

"Dot, pardon my breaking into a perfect evening with a thing as serious as this, but I must do it. You know what I've been working on—the conquest of the Green Germ. I've succeeded — partially. To go ahead and finish the task,—I need money—more than I can lay my hands on. Dot, dear, you believe in me, don't you?"

The girl allowed the machine to slow to idling speed and turned a somewhat piqued face to her sweetheart. "You mean, Dick, that you want me to give you some money for—for that—"

"Why, Dot!" burst out Dick, sensing the veiled scorn in her voice. "You sound like—like you don't consider my work worth while. And I always thought—"

A Love Quarrel

● The girl had stopped the car in the middle of the gravel road. "Oh, Dick, what's the use of hiding it any longer? I like you; I love you, but since you've been secreting yourself in that messy old barn, dabbling with chemicals, forfeiting the life to which you were born—"

She ended with a sob, hiding her face in her hands.

Dick, his face contorted with a pain that had stabbed through his heart with her careless words, bent dull eyes on the girl he loved. "Dot—I'm sorry. I guess it had to come to this. The life to which I was born means nothing to me any more." He stopped, himself overcome.

The girl raised a tear-stained face. "I spoke with your father yesterday, Dick, and he asked me to invite you back to his full regard if you would give up your—your—work." She had almost said "puttering" but realized it would only hurt him more. "And Dick, won't you do that for me?"

"Let's go back," said the man quietly. His face held her answer.

Their parting was abrupt. A small anger and great pride upheld the girl till she was out of sight of the barn. Then she stopped the car and burst into violent sobs. It was an hour later that she finally started for home, her pretty eyes sad and unhappy.

Dick stood in the doorway, his face flushed with anger, and watched the one person he loved roar away in a crescendo of power as Dorothy Nash sent her car tearing away. His outlook on life underwent a sudden revision. In his combined feelings of despair and disgust, he vowed to himself that humanity was not worth the effort of any man's talent. He began a train of thought that astounded even himself. He began to wonder if he shouldn't give up his unselfish labors and take advantage of the money and power his dad could place in his lap at but a word. Here he had been striving to do good, and the people he revered most, loved most, proved entirely unworthy of that good. Better that he should let Fate take its course. Let the horrible Green Plague come again and wipe out humanity, himself included. Life was hardly worth living. Something had dropped from his soul and heart and had gone racing away in that maroon car.

As he stood there bewildered and disgusted, he gazed upon the setting sun. In a blaze of orange and gold, its fires majestically sank below the distant pine-covered hills. As the globe disappeared, a magnificent change of colors took place. Streaks of vivid red dulled to burnt sienna; splashes of orange suffused the western sky, reaching to fuzzy sunset clouds; clinging streamers of yellow and gold outlined the celestial screen. As the colors became weaker, a misty haze overshadowed the scene as if it had always been there, invisible and waiting till now. The haze deepened as the colors faded.

Dick found enchantment and heart-ease in this cosmic theatrical color play. But he froze suddenly in nameless terror. The haze had become a definite green in hue, glowing stronger and stronger. He shook his head and stared. As the final dying glow of the sun went, with it went the green mist, dissolving into the blackness of night.

He drew the back of his hand across his eyes. Had his taxed mind conjured up the whole scene with that evil green mist? Or had he, through some phenomenon of refraction, actually seen the cloud of Green Germs?

The next night after supper, which Dick ate with the Craft family, he and George went to the laboratory. The latter had finished his pruning job that forenoon and had been in the city all afternoon, trying vainly to raise money, to get someone to listen to his story of a cure for the past and forgotten Green Plague. But tired as he was, he saw that Dick was exceedingly downcast.

"What's wrong, Dick?"

"Dot and I split," murmured the young biologist so low that the other could hardly hear. Then he told the whole story.

George's face turned white. "Dick!" he cried agonizingly. "Will you ever forgive me? I'm the cause of it! I went to see your dad yesterday about—about raising that money. He must have thought, even though I denied it, that you sent me, that you were weakening. That's why he asked Miss Nash to—oh, God!"

Dick was stunned. "Gosh, George, you shouldn't have done that—asked my dad for the money." Suddenly he burst out laughing. "But I'm glad you did. It brought matters to a head. It was inevitable—between Dot and me. Now listen, George. Forget what you've done. Don't blame yourself that you have disrupted my friendship with Dot. From now on—*from now on*—I'm through with everything in my past."

Dick's eyes dilated with a wild light. His face became hard. "All washed up—my past. And as for the serum, to hang with that! My father broke my spirit; Dot broke my heart. So the hell with the world!"

George Craft's first thought was that

his friend's reason had tottered; that the ceaseless, gruelling labor of the past few months had finally snapped his keen brain. But no look of insanity shone from Dick's eyes, only a sparkle of cold fire; only fierce determination.

"You know, George," whispered the young biologist suddenly, getting up from his chair, "I think the Green Plague is coming back. I saw green in the sunset. We are heading into the cloud that I always suspected lay in waiting for us. And when it comes—"

George sprang up, his face seething. "And you, with the chance to save the world, with the chance to live in history forever, are going to give up now—*now*—you—I thought you—Oh, you can't be serious; it's strain — overwork — you'll forget this in the morning. Tell me, please Dick, that you're joking."

"I'm *not* joking," cried Dick wildly. "Can you blame me? My own father calls me a 'putterer'—the girl I love as good as agreed. Why should I try to save humanity when it can be that selfish and narrow-minded? Let the Green Plague come and bring them face to face with doom. That short few hours of repentance, of true insight, before death, will do them more good than a lifetime of egotistical security. I have tried and have been spurned. I've told you how I went to all the big medical institutions before I came here, trying to warn them, offering to do research on the Green Germ without recompense. What was my answer? 'Fool—dolt—pessimist'—anything but sympathy."

"But still, Dick, you can swallow all that in view of the right-about-face that they will do *after* the Green Plague has come and has been conquered with the serum *you* discovered. Then you will come into your own, Dick. It will be your present unselfishness and uncomplaining labor that will later become the bitterest dregs for them. Can't you see that when your serum has proven effective, and your name flashes before the world, that all those who have scoffed at you will suffer a remorse that will be immeasurable?"

Dick waved a tired hand. "Now you're just appealing to my vanity, George. I was thinking of it in a different way. But go now, George. I'm going to take a good, long rest. I'll probably sleep half the day tomorrow. Then we shall see."

And George left to a sleepless bed. When he had gone, Dick paced the floor for long minutes, thinking deeply. Finally he spoke aloud in the solitude of his thoughts. "For the sake alone of a good kid like George, the world is worth saving. There must be others like him—simple, honest, poor people—people that I have never met in my former life."

And when he awoke at high noon, he sprang to his work with a will. The agonies of the preceding day had become dimmed, as the moon becomes dimmed by the bright sun. He resolutely put all thought of his ex-fiancé from his mind. Probably she would send back her engagement ring by mail, having made no move to return it the night before. Dick even chuckled a bit as he thought of the value of the ring. He could probably pawn it for several hundred dollars, as he had long ago pawned all his personal belongings to furnish the laboratory.

George burst in at two o'clock and waved a fistful of bills.

"Got it, Dick! Money—all we'll need!"

Dick came close to dropping the flask in his hand. "Where?"

"Secret. Went to town this morning and finally got the loan. Never you mind where or from whom. That's my worry. You just take this money and spend it!"

"Gosh, George, you're — you're just splendid. How much?"

"Five thousand. Enough?"

Dick whistled. "Plenty. I'll sit down right now and make out an order."

George, flushed, happy, sat down and caught up on his breathing. He took the orders and insisted on mailing them directly in town, although Dick argued that there was no need for such haste.

"Got the rest of the afternoon off," said George when he came back, "and I'm going to pitch right in and help you!"

CHAPTER III

Sleepless Nights

● The next two weeks were busy ones. With the big electric oven that the new funds purchased, Dick was able to raise his cultures rapidly and in large quantity. Gradually he saw the Green Germ destroyer approaching within his reach. Each day saw a stronger, more dependable serum in the test tubes. Soon he would have a solution of which a mere hypodermic full would clean a human's blood system completely of the virulent Green Germs. His final tests would have to be made on a chimpanzee. This latter animal had suffered as badly from the last Green Plague as the human race. Anything that would cure it would cure a man. And the indefatigable George would help him when chores were over, several times half through the night.

It was one evening at supper in the plain but clean home of George's parents that the worst came. The radio orchestra to which the whole family had been listening was suddenly cut off and an authoritative voice with a note of grave concern in it announced that the Green Plague had again returned, and that the President of the country, to forestall the panic of the previous plague, would deliver a message to the people the following night.

Dick's fork dropped from nerveless fingers. Four white faces peered at one another.

"We saw it coming—every night in the sunset," whispered George hoarsely. "And now it's here!"

Dick sprang up, his chair toppling backwards. "Come, George, we've got to finish that serum and get the final formula —*tonight!* We can't call our lives our own now."

Without a word, they raced to the barn and plunged into the work.

To say that they worked like demons would be putting it mildly. Every fiber, every nerve of their already tired bodies and brains was strained to the limit. And just before sunrise, Dick slumped before the crude desk and rapidly, carefully wrote down the ultimate formula and the complete process of producing the serum. George drove him to town where he telephoned Washington. A great and infinite patience overcame Dick as the officials at the other end seemed skeptical, thought he was an insane quack. But the pleading in his voice, his earnestness, won their attention and he was connected with the chief biologist of the medical bureau. In a half-hour, he was through and the precious formula was the property of the world.

George ran forward as Dick collapsed without hanging up the receiver, picked him up in eager arms and carried him to the car, with a curious crowd already about them. George took no notice of them; only Dick's welfare was his concern. As he started the car, Dick opened his eyes.

"George, old boy! Take me—lab—"

"No, no! It's hospital for you!"

Dick struggled to sit up. "No, George —not sick—tired—take me to lab—little sleep and then—work."

After a minute of hesitation, George decided to carry out his wishes, and laid the soundly sleeping young biologist in his own comfortable bed in the house.

CHAPTER IV

The Return of the Plague

● The Green Plague struck with numbing force. From isolated cases here and there, it loomed terrible with hundreds and then thousands dying each day. For a week before Dick had perfected the serum, it had waxed mightily. Yet the world as a whole knew nothing because it had been suppressed for that week to avoid panic and to give the governments a chance to plan ways of allaying public fear. The night after Dick perfected the antitoxin, the President of the United States delivered a message not only to his people, but to the whole world. His speech is memorable for one statement in particular:

"Up till a few hours ago, I had only a message of appeal: that we, humanity,

should not allow this frightful catastrophe to wreck our civilization, no matter how much greater this attack of the Green Plague might be than the last. But raise your voices in thanks to a Higher Power, People of the World, for our medical department has the formula for a serum that can cure the Plague! An obscure—but may Heaven bless him forever—young biologist, foreseeing this second plague, devoted his all to the continuance of the human race. We have already radioed the formula to every corner of the world—"

And so it was that in the midst of a great fear, humanity found a balm.

But even with the serum, it was a fearsome experience for mankind. Before the antitoxin could be produced in sufficient quantity to safeguard all human life, before the chemical and medical laboratories could turn out the precious serum in huge quantity, millions died. Outlying districts that had to wait for boat or airplane to bring the cure were sometimes decimated to a man. In fact, it was six months before the production of the serum overbalanced the prevalence of the Green Plague epidemic. At times, corpses lay strewn about some city which had been the victim of a particularly vicious attack of the insidious Green Germ. The highways were gruesome testimonials of the plague's ravages, their sides cluttered with cadavers, for many people had blindly left the city, thinking the countrysides more immune to the attack of the Green Germ.

But how foolish it was to flee! The earth had plunged into a vast cloud of cosmic proportions. Its atmosphere became saturated with the deadly Green Germ. One was as liable to die in a rich city mansion as if he were deep in virgin forests. And how queerly the plague worked! A city stricken—half contaminated, the other half untouched. A family stricken—mother and two children dying, father and one child wishing for the same end, but never finding the sickening green blotch beside the right ear. Its poisonous breath swept over all, yet many people, long before the serum came to them to protect their lives, lived through the epidemic as if a guardian angel were watching them. It was queer, and horrible—and endless, it seemed, for the Green Germ continued to saturate earth's atmosphere for almost two decades. Without the serum, the last man would have died long before the Green Germ left; with the serum, life went on as before.

But before the production of the miracle fluid had reached sufficient proportions to protect all human life, the events in the life of Dick Palmer reached a climax.

CHAPTER V

A Frenzied Populace

● Dick awoke from his deep sleep before the evening meal. He greeted George with a smile. Both of them felt a gigantic load off their shoulders.

"Our work, however, is far from over," said Dick when they were back in the laboratory. "We've got enough material here to make several hundred injections of the serum. Each of those will save a life, for it will take some time for the government to turn it out. As fast as we make it, we will send it to the city to be put in the hands of some competent physician."

Hardly had they begun their labors when a radiogram came from Washington. Half the message praised and thanked Dick, but the other half brought a shining light to his eyes. For the government, having decided to establish serum-producing stations all over the country, was shipping immediately a vast quantity of the necessary chemicals to their city. Dick, stated the message, was to be in charge of the station.

"And, George," said Dick whirling, "you are going to be my first assistant. Some of this glory is going to be yours!"

They worked with a will for three days, turning out a small batch of the serum which immediately went to the city. The new serum station would not be completed for another two days.

But from that batch, Dick set aside ten ampules, locking it in the cabinet of which both he and George had a key.

"For us," said Dick, "in case we or our —our loved ones"—he choked as he thought of his dad and of Dorothy—"contract the disease. It's selfish, I know, but I'm only human."

"I should say it *isn't* selfish, Dick," cried George. "You have a perfect right to wish to protect your close relatives. And furthermore, you, yourself, are too important, too much needed to die. The functioning of that station will depend upon you. With your experience, it will probably produce serum long before any other station does, thereby saving so many more lives."

"Well, now, that serum I've locked away is for you, too, George—for you and your splendid parents, who believed in me when my own father didn't. You've got a key; and you know how to use a hypodermic."

"Thanks, Dick," said George simply, tears in his eyes. George was just a young man. The terror of the Green Plague striking their happy home had been bothering him no little. Now there was no such worry.

And the terror of the Green Plague striking at *his* home bothered Dick! The last three days had been busy enough to keep his mind from such thoughts. But each evening, the Crafts retailed for the two young men how many deaths had struck in the near-by city, the city in which lived Dick's parents, friends—and Dorothy Nash. A sense of pride kept Dick from dashing to the telephone and communicating with his parents, but that third day, a particularly devastating one for the city, his pride broke down.

With a certain trepidation, he approached the steel gates of the Palmer mansion. It seemed untenanted. The butler came at his ringing, peering out fearfully as if expecting to see something horrible. The advent of the Green Plague had made people wary of each other, afraid to look at one another, for fear of seeing the dreadful green blotch beside the right ear. The butler's face lit up with a guilty smile, and he ushered in the ousted son of his employer.

Dick sat in the massive parlor. As he gazed about, it seemed that somehow the regal splendor of the place had vanished. In the face of the awful tragedy of dying hundreds outside, the magnificence of this house seemed out of place, sacrilegious.

He looked up when he heard footsteps. There in the doorway stood his father. He was thinner than before and there was a haunted look in his face. Even his firm step was gone, and with it, arrogance. Wesley Palmer was frightened by the Green Plague; he knew that even his wealth could not buy him security from it.

He stared at his son coldly. "You here?"

A lump arose in Dick's throat. He wanted to leap up and embrace this man, comfort him, tell him that he had a cure for the Plague. "Dad!" he whispered hoarsely. "I've come here—"

"By what right?" The voice was harsh and bitter.

It stabbed the young man to the heart. His father had not changed, even in the face of death. "Dad, can't you forget our differences at a time like this? When the Green Plague—"

"Why do you come to this house from which you have been banished? There was never a black sheep in the Palmer family before. Do you come for money when the world is dying to continue your puttering with which you have disgraced our name?" Glassy hard eyes stared at Dick as though he were a criminal.

"Can I see Mother?" asked Dick suddenly sick at heart.

The stern figure stiffened and a finger pointed. "Get out!"

Dick sprang to his feet, his eyes ablaze with rage. "Dad, you are still unwilling to forget and forgive. I have never harbored malice toward you for your acts toward me, but I at least expected to find a man with some reasoning left. The world is a death-trap at present. Either of us may be stricken any moment. Yet you talk of your proud name!"

Dick choked and went on: "I haven't

come here for money, I came to see you and mother, to tell you——"

"*Get out!*" came in thunders from the elder Palmer.

"All right. I'll get out," said Dick, suddenly quiet. "But you'll listen to my last words for your own good. Some time ago a young man came to you for a loan. You refused him, thinking I had sent him. I didn't. That money he asked for was to be used in my research on a serum to combat the Green Plague. We got the money elsewhere. That blessed serum that the government has been promising over the radio, when its production gets under way, is what I 'puttered' away at. If you had given me the money, I would have completed it sooner, and thereby saved many lives."

Wesley Palmer leaned drunkenly against the wall, his face suddenly ashen white.

"You, dad—*you murdered* all those people by refusing to help me! Upon your head, with all its despicable family pride, rests their blood. Now I'll get out."

Dick turned at the door. "If you need the serum, you or mother, come to me and get it. But the only way you'll get it, dad, is by crawling up to me on your hands and knees—by begging it from that worthless 'putterer' who disgraced your proud name!"

Dick, outside the Palmer mansion, stepped into George's car, which he had borrowed to come to the city, and slumped into the seat. After several minutes of inaction, he raised his head. His face looked old and tired. The lines of hardship and sleeplessness streaked his young features. Starting the motor, he dropped in on the physician to whom he had entrusted the serum he had made. The serum was already used up.

"And I could use ten times that amount," finished the doctor. "This region is being struck heavily. Pray God the government supply comes out soon! I didn't announce that I had some of the serum, because I knew the people would raid the place here and probably fight for possession of the serum. I passed it out to those I thought worthy of life. It's a hard task, Dick! The news is beginning to leak out that you have more of the serum. I've been bothered all day with people coming and clamoring for antitoxin, till I told the butler to lock the door and keep everybody out. I would advise you to see that your laboratory is protected from raid. You know how a mob is in times of panic."

That made Dick thoughtful. Perhaps he would need police protection for his farm laboratory. He knew that the government would picket soldiers at but a word. But he dismissed these thoughts for the time being as he headed for the Nash home. He had fought against it, but love had conquered. He must see Dorothy and assure himself of her safety.

He staggered for a moment in the house when a hysterical mother and nervous father informed him that Dorothy had been stricken but an hour before. They had, at her suggestion, called the Craft home to find out where Dick was. The boy George had answered and then suddenly the phone went dead.

His head whirling, Dick rushed to the girl's bedside.

"Dick!" she screamed. "Oh, Dick! I thought you'd never come!"

"I'm here, darling, and I'll never leave you."

"Dick, I've got it . . . . look!"

As she made as if to push the hair away from her right ear, Dick stayed her hand. "Never mind. I can save you. I've got some serum at my lab on the farm. You're coming with me."

Without delay, he swept her into his arms, blankets and all. Even as the car left the city, she lapsed into the coma that precedes the death by the Plague some two or three hours. He drove furiously, yet carefully. It disturbed him to notice many other cars on the road, some returning, some going, some smashed and broken by the roadside. From all of them peered white, frantic faces. Sometimes he caught a glimpse of a horrid green blotch.

A Dramatic Climax

● Dick knew what it meant. As the doctor with whom he had spoken but an hour before had predicted, the news had leaked out about the farm laboratory, and frenzied, plague-maddened people had raided his place. Only one thing drummed through Dick's head: "Faster, faster! Maybe I can yet save that precious serum in the cabinet!"

His heart sank as he came into view of the barn and house. A sizable crowd was there, milling aimlessly about the grounds, trampling without regard for the Craft property. Then he saw the barn with its doors open and many people within, fighting. And the noise was frightful: screams and shouts and mad bellows of insane anger. All were there but for one purpose, the serum that they had heard could save their lives.

Dick sobbed. Was he too late? Had the mob broken into the cabinet and taken the serum? Where was George? What should he do? Must this girl, the girl he loved more than life, die?

Something caught his eye. A colored cloth waved in one of the upper windows of the house. It must be George. Good faithful George; he must have been watching for his return. He watched the window as the car circled about the garden. George's head and arm came out. He shouted, then realizing Dick could not hear in the tumult of the crowd, pointed vigorously to the back door. Dick waved a hand and headed the car for the rear of the house, honking the horn continuously to make his way through the people who seemed to be everywhere, standing around waiting for they themselves knew not what.

George met him at the door. He had been in a fight. His clothes were ripped and torn, blood had trickled from his nose, congealing on his chin.

"For God's sake, hurry!" he gasped. He had a revolver in his hand, and kept an eye on the crowd as Dick ran in with the unconscious girl. Immediately, the crowd, divining that something was up, dashed at the door with wild shouts.

"Quick, upstairs!" screamed George. He swung the lower door shut, bolted it, and followed Dick with his precious burden. Upstairs, Dick also found Mr. and Mrs. Craft, pale and frightened.

"It's been terrible!" said George as soon as he had closed and locked the door from downstairs and barricaded it, as it had been previously, with heavy trunks and tables. "They came in droves, raided the lab, tore things down, and—"

"But the serum, man, did you save that?" burst in Dick after laying the girl on the bed.

George held up one ampule.

Dick gasped and paled. "Where's the —the rest?"

"Broken in the fight! It was all I could do to save this one! Thought I'd never reach the house alive."

Dick steadied himself. "Fools! Blind, selfish pigs! Look at them down below, snooping around, snarling like a bunch of hungry rats. They'd murder to save their own selfish lives! I almost wish I hadn't discovered—"

"Good God! Dick. Don't stand there talking. Dorothy is dying! Inject that serum."

Dick sprang into action. It was over in a minute. A careful jab in the neck, a gentle push on the plunger, and the Green Germ toxin flowed into the girl's bloodstream. In a few minutes, the green blotch on her right temple dulled. In a half hour it was obviously vanishing, although it would take ten hours for the antitoxin to do a thorough job. Then and then only would the deathly coma leave her.

Silence reigned in the room. George watched the crowd below. The Crafts went to bed, too unnerved to remain on their feet.

Two hours later, George spoke to the silent figure seated at the edge of the bed, watching the girl's face. "Crowd is thinning down. Most of them leaving. Must have given up hope."

He turned to Dick, saw that he was oblivious of the world, and quietly called

to him to come below. For he had seen a car coming—a car that he had seen once before, Wesley Palmer's car. He was waiting at the door when he stepped out.

"Dick!"

The young biologist started, turned his head slowly, then remained as if petrified. Dimly he saw his father, a tall worn figure. But the full concentration of his eyes rested on his right temple—on a horrible green blotch that seemed to writhe like a snake.

"Dad!" cried Dick and it was a moan, not a voice.

"Dick! You told me to come if . . . . if I needed the serum. Dick, forgive me!" He came forward on hands and knees. "I've been a fool! A million dollars for the serum—anything, my whole fortune."

When Dick spoke, his soul was ashes. His voice was steady, but his brain was afire. The man before him—his father, broken, sobbing, without pride—doomed.

"Dad, all the money in the world can't buy you life now."

"Dick!" One agonized scream.

"There is no more," finished Dick calmly.

But when he caught his swooning father, he was sobbing. He laid his limp form on the davenport gently, reverently. A proud, austere, misguided man, but after all, his father.

Then he sat down beside Dorothy's bed, to ease his aching brain for a moment. Then he would bring dad back to Mother.

● He looked up at George standing in the doorway, then sprang to him as he collapsed. Plainly now Dick could see the green blotch. And he hadn't said a word! Dick suddenly remembered how queer George had been since they met here at the house. His eyes fluttered open.

"George!" moaned Dick, cuddling him in his arms like a baby. "Why didn't you tell me? You must have had it when I brought Dorothy. You deserve it more than she. After all, she was faithless, while you—"

"No, no, Dick!" came faintly from the boy. "She was faithful, too. That five thousand, Dick—she gave it to me! Told me to keep it a secret—because you would think she was trying to buy back your love! She was faithful, Dick. She deserves to be saved—"

"And you!" moaned Dick. "You—oh, I'd give my dad's whole fortune now for more serum."

"Good-by, Dick!" came from the stricken boy. "I go—but we conquered the Green Plague—didn't we, Dick?"

"Yes, we did! You as well as I. You, George, your name will live forever."

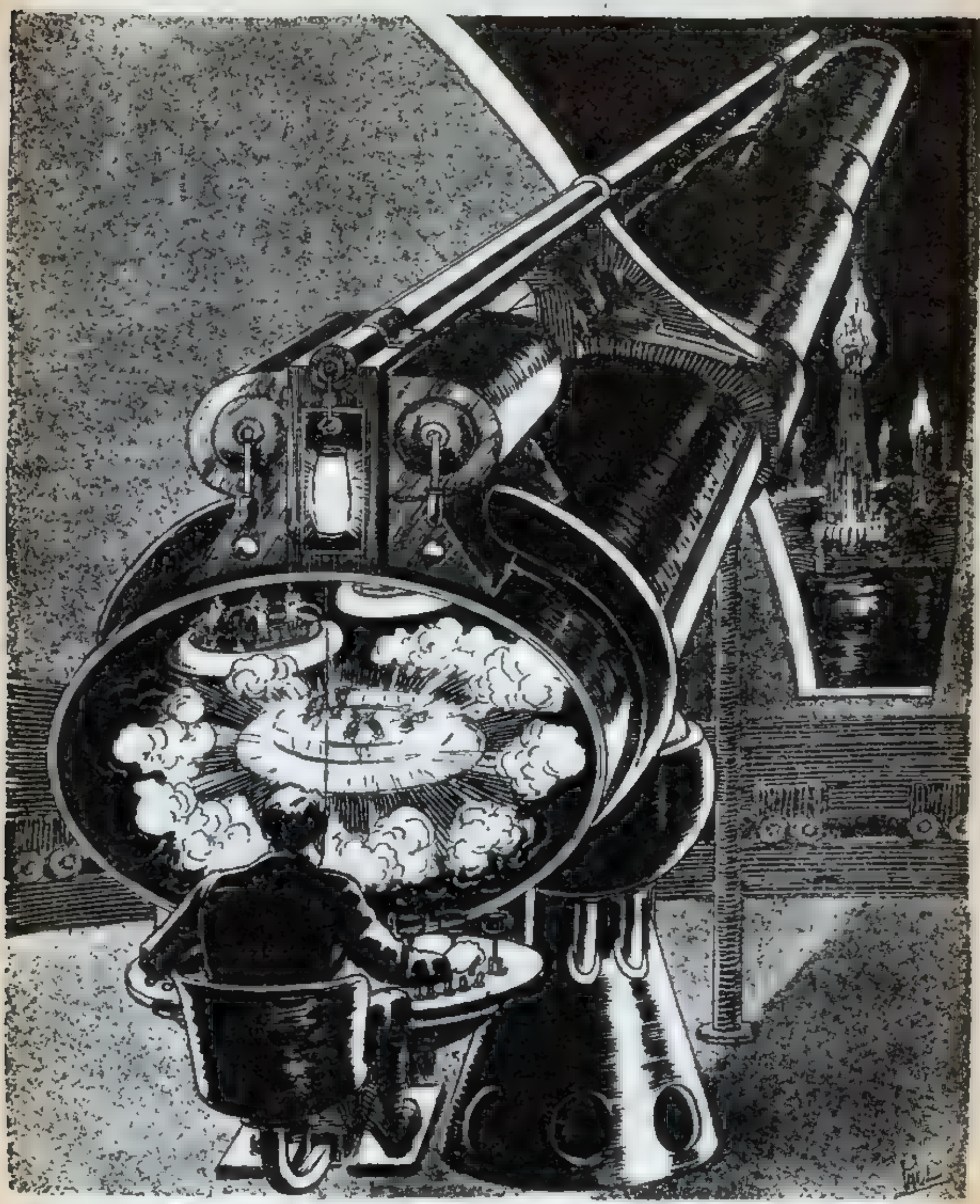
And George sank into the coma which precedes the Green Death with a happy smile on his boyish lips.

THE END

WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by This Questionnaire

1. What percentage of oxygen is there in the atmosphere? (See Page 1119)
2. What is crystallized carbon? (See Page 1119)
3. What is the variometer used for? (See Page 1122)
4. What is magnetism associated with? (See Page 1123)
5. When is a magnetic field created? (See Page 1123)
6. What causes a magnetic storm? (See Page 1123)
7. Who first located the north magnetic pole? (See Page 1123)
8. Why should clothes be kept dry in the arctic? (See Page 1128)
9. What is the speed of the earth whirling around the sun? (See Page 1141)
10. In what period of history was the Black Plague? (See Page 1143)



(Illustration by Paul)

One by one they dissolved into expanding swirls of dust.

XANDULU

By JACK WILLIAMSON

● In the second instalment, we learned that the horrible Red God of Xandulu, the creature of an alien dimension, is the symbol of the red race which is planning the destruction of all matter—the consequent annihilation of the universe. The Flame-Folk, on the other hand, find the very thought of violence against their nature, but, at a great cost, they aid Miles Kendon in defeating the Red God. Now, for the third time, he returns to Xandulu.

Herewith we conclude this colorful tale written in the true Williamson style.

WHAT HAS GONE BEFORE:

● "Brandy," an invalid, had been cruising about the Mediterranean when he suddenly sees an airplane in the night sky fighting some peculiar balls of light with a machine gun. He in turn blows one up after another, dissolving them in a purple flash. The machine crashes into the sea, flaming to destruction. Brandy recognizes the flying tactics as those which only his former buddy, Miles Kendon, could perform. Miles is rescued with his passenger, a girl. Miles tells Brandy a strange story. He had sighted a beautiful lost city in Africa and landed to investigate. There he found a well which descended for at least ten miles. One day, after exploration, he had seen a huge bird fly out of the well with a girl on its back. The bird died from the thin air of the surface compared to its natural habitat, and Miles rescued the girl. Her name proved to be Su-Ildra and she had come from a great kingdom below the earth known as Xandulu. Miles and Su-Ildra began to understand each other after a while, and Miles learned many things of the netherworld. Su-Ildra was hunted by the creatures of another race than her own who exist in Xandulu and urged Miles to leave in the plane with her immediately. Her enemies had a powerful science and projected globes of light onto the surface to search for her. These globes were controlled from the creatures of Xandulu and could battle and do other physical things. Just as they had reached Brandy's ship in the plane, the globes had overtaken them, but had been conquered. He is sure that they will search for Su-Ildra when night comes again, for they cannot exist in sunlight. The next night, the ship is well on its way to France, but the globes appear in the distance. After a fearful battle, they capture Su-Ildra, taking her back to Xandulu and leaving Miles unconscious on the deck. He returns to Xandulu as soon as he can secure more supplies, and is captured by the red race who worship the god of destruction. Alú, the Youngest of the Flame-Folk, forges an invisible sword for Miles, so that he slays the Red God, who had come from an alien dimension. Upon his success, the hordes of the red race, seeing the death of their deity, swarm into the pit of the god toward Miles, but through the magic of Alú of the Flame-Folk, he is taken from this danger and awakens to find himself on the surface of the earth, out of Xandulu. He wires to his estate in San Francisco for more supplies and tells Brandy that he is about to descend again for the last time, this time to destroy the red race who threaten the existence of the earth, and to rescue Su-Ildra. *Now go on with the story.*

BOOK THREE

Conclusion

The Flame-Folk of Xandulu

● The week Miles Kendon had named dragged by, and others, until eight months had passed. In vain I waited for his return, or for the radio message he had so casually promised. Strain of waiting told upon my frail health. As winter came upon the Mediterranean and expectation died, I strove to put Xandulu from my anxious mind. The grandeur of Rio's wide harbor slowly filled my fancy; I spoke one day to Captain McLendon, and we steamed out past Gibraltar.

Yet thoughts of Miles would not leave me. Despite my efforts to forget, my nights were filled with dreams of Xandulu, as it had lived in the tales he told me. I filled many days with arranging and dictating to my boy Carlos the substance of the strange narratives that Miles had re-

lated, but not even then could I free my mind of them.

Xandulu! How could one forget it?—world buried in the heart of the earth!—domain of scarlet forests and purple seas, roofed with a dome of green, lit by clustered, vari-colored suns—the land of Su-Ildra's beauty, empire of the scarlet-skinned Amazons of evil Neng, haunt of the age-shrouded mystery of the Lelura, the Flame-Folk. The hidden wonder of it pursued me like a tangible thing.

Many nights when my feeble body should have been at rest, I sat in the yacht's tiny radio room until far toward the dawn, receivers on my ears, searching the ether for some word from Miles. And at last my eager persistence met reward!

It was during the middle of a windless night, the *Gay Moth* furrowing an oily sea to leeward of Lanzarote, when a whisper disturbed the rustle of static on the wave-band Miles had named.

Then I heard the voice of Miles Kendon!

"Good evening, Brandy," he said, and his familiar tone was as easy as if he spoke merely across a whisky and soda, and not from one hundred miles below. "That is, if it happens to be evening up in your world. My watch stopped—well, some time ago. I haven't kept track of the time, but it must be a month or so since I left you. Haven't thought to call you up. Let me know if you happen to be listening."

Feverishly, I roused Connors, the operator. Not an even breath did I draw until we had the transmitter tuned, and I shouted into it.

"Miles!" I yelled. "Miles! Where are you? I'm so glad to hear! 'A month or so!' It's been eight months! But tell me what has happened—"

"Good old Brandy," his voice murmured back. "I knew you'd be listening if I could just catch you at the right time. But eight months! I don't know where they've gone! . . . . Tell me how you are, Brandy. No hurry. We've all night."

I could hear the ringing vitality of his voice, even in the faint whisper of the phones. The sound brought vividly back to me a living picture of Miles—lean, tall, massive of shoulder. I saw his thin face, smiling, yet touched with something grim and given a hint of sardonic malice by the old scar on his temple. A blond Viking, he was, who plunged into the slumbering perils of Xandulu as eagerly as Eric the Red breasted hostile seas.

"You're in Xandulu, Miles?" I questioned. "You found Su-Ildra?"

"You're right as a royal flush, Brandy. Right now we're on Arnac Rock. As for finding Sue, I'll tell you all about it when we have time. I suppose you're still drifting about the seven seas on the little old tub?"

All that night I talked to Miles, and below I have tried to set down the story that he told me.

CHAPTER II

The Trap on Arnac Rock

Of the descent into Xandulu, little need be said. Without untoward incident, Miles flew southward over the great plain of Marrakesh, over the foothills and past the great peak of Tinzar. Again he found that nameless necropolis of strange green stone in the mountainous edge of the Sahara beyond the High Atlas. Just at sunset, on the same day he left me at Algiers, he dived the plane into the Well.

Cutting off the motor to conserve gasoline, he volplaned down the great shaft in silence complete save for the rush of air against his machine, isolated in the gulf between two worlds. Night came above as he glided in a close spiral down the thousand-foot pit, and a few stars burst into the dwindling disk of the sky.

Intense eagerness filled him to reach the end of this phenomenal flight; each new feature of the hidden world brought him more poignant memories of Su-Ildra. Her sweet face and her dark eyes pensive beneath a helmet of coppery hair were living in his mind when the green walls of the Well grew brilliant with the undying day of Xandulu, and he dropped

beneath the amazing dome that arches Xandulu.

His heart beat faster when he saw the close-grouped seven suns below, swimming in the blue haze that hangs forever in the heavy air. Pushing the machine into a steeper dive, he flung it screaming down, slipping past them toward the tiny isle of Arnac in the southern sea.

Aral became visible through the haze, the western land of Su-Ildra's decimated people, crimson with its strange forests. And far in the south lay the dark island of Neng, dwelling of the dread Ryka, the scarlet folk, whose hideous scorpion-god he had slain.

Over the eastern half of the great disk of Xandulu, a bank of white mist clung—milky haze, increasingly alive with evanescent motes of flame. Beneath it, he knew, lay Lelural, land of the Flame-Folk, of the reptilian race, most ancient and mysterious of the dwellers in Xandulu, possessing incredible powers, yet paradoxically unable to cope with the mad threat of Bak-Toreg and his cult of annihilation.

Miles pondered the astounding being, "Alú the Youngest," his ally in the adventure in Neng, whose astounding mastery of space had carried him by an unbelievable method to Algiers.

An uncomfortable feeling filled Miles—it seemed almost a premonition—that the conflict of dread and ancient forces which had involved him was not yet done. True, the Red One was dead—but the gigantic scorpion had been no more than a symbol. Bak-Toreg still lived, with the power of his mad religion of destruction yet in full tide behind him.

Had the yellow-faced priest abandoned his insane design? Miles knew in his heart that he had not.

The abrupt black rock of Arnac grew out of the purple sea, and the tiny blue cylinder of the house, the prison, perched upon its highest crag, at last was visible. The somber, strange-hued sea was almost ominously still. Miles brought his craft down easily upon the metallic surface and safely close in the lee of the rock.

He swam ashore with a line. The sea plane made secure, he scrambled up a knife-edge of black, brine-crusted stone to the tiny blue edifice where he and the lovely Su-Ildra had drained the bitter-sweet cup of their brief joy, before the insidious hand of Bak-Toreg tore them apart.

Deadly stillness overhung the rock and Miles's heart paused as he neared the summit, for he saw that the metal door of the strange house was vacantly open.

"Sue!" he panted as he staggered desperately for the few remaining yards. "Sue! You all right, Sue?"

No sound, no movement came from the cylinder of blue porcelain.

Miles burst through the yawning door, searched the silence-haunted lower rooms.

"Sue!" he shouted despairingly, leaping up the stair to the broad, many-windowed room on the upper floor where had been spent their hours of happiest communion, and where the invading sphere of the yellow priest had reached them.

"Sue! Where are you, kid?"

The upper room was also still.

The gaping hole torn in the blue wall by the attacking instrumentalities was unrepaired, and through the ragged opening came the weary whisper of a dying breeze. Far beneath, the purple sea was a dead and somber plain. Through the crystal ovals of the great north windows streamed the rays of the clustered suns, splashing the floor with mingled strange colors.

"Sue! I know you're here! No use hiding from me, kid!"

He ran across the room.

On a couch, where it had been hidden from him as he stood at the head of the stair, he found the still white form.

The white body was motionless, unbreathing, covered to the shoulders with a sheer silken coverlet. The oval face was pallid and fixed; the dark abundant lashes were lying like shadows on the blanched cheeks. The long hair was loose in a splendid torrent, falling across one delicate shoulder, almost to the floor.

"Sue!" Agony shook his voice. "Oh, Sue!"

Fearfully, with a trembling hand, he touched the exposed fair shoulder.

His hand encountered no human flesh.

A cold, hard surface, like glass, met his fingers—the surface of a lifeless, painted image.

His dazed mind paused. What was this?—a deceptive likeness of his beloved as she might lie in death. What did it mean? And what had become of Sue? Had the yellow priest spirited her away, leaving this mocking dummy in her place? Why? Where was Su-Ildra?

Miles seized the arm of the figure.

It was light, evidently but a hollow shell.

Then he leapt back, and the fragile thing slipped from his nerveless fingers to shatter like glass on the floor. His eyes were riveted upon the couch, on something that had been covered by the silken sheet—a writhing, unfolding mass of bright, copper-hued coils. It looked like a tangle of thin wire, suddenly alive.

Ends reached out of the glistening, stirring tangle—ends flattened into little disks and glowing faintly, as if powdered with golden dust. Long gleaming tendrils that reached out like copper wire changed by some dread alchemy into living vines, growing incredibly.

Miles did not understand. But he knew that here was something hellish—some devilish work of the yellow priest, this amazing likeness of Su-Ildra and the stirring mass of metallic filaments.

A tiny golden disk reached his bare wrist. The touch of it seared like incandescent metal.

Startled from his brief paralysis of wonderment, Miles cried out and snatched away his arm. He turned and tried to run toward the door, but the one second of bewilderment had held him too long.

He felt his feet wrapped in a tangle of the sinister coppery strands. Searing pain stabbed at his calves and ankles at a score of points; he stumbled, fought in vain to keep his balance, then fell at full length on the floor.

With a fearful, avid quickness, the bright strands bound him. Even as he made his first attempt to rise, thin hard wires reached about his arms and shoulders, drew themselves cruelly tight. From a thousand points about his body stabbed agonizing pain as the little golden disks greedily sought his flesh.

The coils were about his throat. He could no longer breathe. He gasped. In his ears was a roaring. Fiery pains touched his cheeks; he felt sharp wires cutting into them. Darkness thundered down upon him, shattered with cruel lightnings of pain.

His staggering brain struggled to understand what was happening. This was the work of Bak-Toreg. It was a trap! The image of Su-Ildra had been a lure to bring him within reach of this frightful, unbelievable destroyer of living wire.

He writhed and shuddered and fought blindly at the merciless amazing net that had enfolded him. Ten thousand piercing pains were drowned in the night of oblivion. Where was Su-Ildra, he thought? . . . . what had been done with her? . . . .

CHAPTER III

"We Are Done"

● For Miles there was no sensation of transition. He had no sense even that time had passed. One second he was in the house on Arnac Rock being swiftly strangled by the tightening coppery strands. The next—so it seemed—he was safely free of them, standing erect, his tortured lungs filling with fresh air. Yet even in that first moment, he knew he was no longer on the rock.

"What—what was the thing?" he muttered as breath came back to him, his mind dwelling on the writhing horror of the grasping metallic coils, to the exclusion of his new surroundings.

"Bak-Toreg calls it the vine of doom. It is but one more fruit of the science of horror that he and his priests still nurture in the temples of their dead god—evil life, lust of destruction, breathed into

hard metal. It is based on a complex metal life-cell. You are the first who has escaped the vine."

That answer came not in spoken words, but in the silent rush of thought—through direct contact with a brain that knew no limitations in Matter or Space.

His attention for the first time on his surroundings, Miles started and swung himself around.

He stood upon a narrow high terrace, his feet buried in a yielding carpet of blue-flowering moss. Beside him leapt up the milky, polished walls of a sky-piercing tower into an unbroken canopy of white, flame-flecked mist. The terrace was rimmed with a low parapet of glistening, snowy stone. Beyond it, at a dizzy distance below, was an undulating field of blue.

Here and there about the blue rolling expanse plunged up other towers of crystal white, slim pylons, incredibly lofty. They were far apart, many so far distant that they were but ghosts, shrouded in fireshot mist.

Upon the tapering spire of each structure burned a globe of pure flame, a swirling sphere of opalescence, from which glowing, polychromatic motes danced incessantly away to increase the swarming specks of light that swam through the overhanging mist.

This, Miles knew, must be a city. Like the blue city of Neng, like the shattered necropolis of green stone above the Well, it was a city of immense, solitary pylons. But these white towers were higher than any buildings he had seen or imagined and this metropolis was far vaster than Neng —how large it was he could not know, for all the edges of it were obscured in the mist.

And the spinning globes of mingled colors, burning on the white pinnacles and feeding the mist with their spawn of many-hued dancing particles, brought the city a bewildering strangeness.

Silence brooded heavily upon blue plains and low hills; the Cyclopean white towers seemed at first completely lifeless. The city was overhung with an atmosphere of loneliness and solitude that properly belongs only to the desert and the wide sea.

All this Miles saw in an instant, and the desolation and despair of the city flowed in upon him like the tide of a cold ocean.

"Indeed the dwelling of the Flame-Folk must seem silent and deserted to one used to the mad torrent of life as it flows in the world above. For but one now clings to the rotten thread of life for a thousand who once dwelt here."

Again Miles was startled by the voiceless and instantaneous impact of thought upon his mind. He turned nervously and saw, standing near him by the white parapet, the first living being he had seen in this eldritch city.

The creature was taller than a man. Erect, graceful with a smooth ophidian smoothness, its body was covered with tiny green scales that were like flakes of bright emerald. Its long arms also were scaled and the small green hand resting upon the snowy parapet, whose fingers were tipped with delicate crimson claws.

Miles's astonished gaze went to the green-armored head. It was crowned with a bright crest of scarlet. A long beak curved from what he must consider the face, and above it two eyes looked unwinkingly at him.

Large eyes, limpid and black, they were, and they held him. In them was the vibrant glow of mind, shadow of sorrow and undying light of laughter, the burden of weariness and the tenderness of love.

Miles knew at once that they were the eyes of Alú the Youngest of the Flame-Folk, whom he had first seen in the enigmatic bit of crystal Su-Ildra called the Sign.

"Yes, I am Alú," his thought was read and silently confirmed. "I saw you stumble into the yellow priest's trap and brought you here to cheat him of his triumph—for a time."

Miles could not cease staring at the reptilian being.

From the narrow green shoulders fell the glorious appendages that he could

only call wings. Silken-thin membranes, flushed with soft flame, they fell to the blue moss at the being's feet—a mantle of wondrous color, of rose and gold and delicate blue.

They lifted a little as Miles watched, expanded shimmering with strange life. It seemed to him that they drew tiny sparks of flame from the mist.

"These organs are unfamiliar to you," came once more the swift, apt flow of unspoken thought. "They gather from the air, for the use of our bodies, the energy generated in the towers. Your scientists already anticipate such etheric transmission of force."

Miles stepped back a little across the soft blue moss and stared at the reptilian being. Such an apparition would once have numbed him with amazement and terror. But life amid the slumbering wonders of Xandulu had hardened him to the weird and the inexplicable. Three times before, when he had encountered Alú, he had been impressed with the generosity and consideration of the Lelura.

The strangeness of the creature inspired worship rather than fear. In a moment, Miles had overcome his first astonishment and the great concern of his adventure in Xandulu was again foremost in his mind.

"Su-Ildra!" he cried. "I came down to the rock for her. I thought I had found her—ill, perhaps dead. But it was just a dummy with that damned vine hidden by it. Do you know—"

He stepped toward Alú again and his voice was husky with pleading.

The great black eyes stared from the strange face, solemn with compassion. The reptilian being did not answer. Miles touched a green scaled arm and looked up into the huge soft eyes.

"Tell me!" he implored. "You *must* know!"

● The crested head bent down and the slender green hand, with its needle-like claws, was lifted tenderly from the parapet to Miles's shoulder.

"The knowledge can give you only pain," came voicelessly. "Better that you should forget. I can tear from your memory the sheet upon which Xandulu and Su-Ildra are written. I can do that and set you back in your own world. That would be better."

"No!" cried Miles. "No! God knows that I don't want to forget. What has happened to Sue? Tell me!"

The great eyes were shadowed with increasing sorrow.

"Then you must share the pain of knowledge.

"We hoped that the mad designs of Bak-Toreg and his priests would be abandoned with the destruction of their god whom you slew in the temple at Neng. But that was not to be.

"Bak-Toreg has kept his hold upon his followers. He preaches to them that the scorpion-god has but made the sacrifice that is demanded of all, that the Red One has but gone ahead into oblivion to prepare a way for the faithful who are to follow with all the earth. Now he plans to culminate the design of ages, to sweep the whole world into an orgy of ruin that is to end with the annihilation of the planet!

"And the priest plans first to destroy Lelural and all of us.

"We cannot fight him, for the instinct of combat left us ages ago. Even to think of violence is painful, destructive to our minds. And Bak-Toreg realizes our weakness to the full.

"Yet he fears us. He knows that in Lelural are secrets never uncovered by the science of ruin that grows rank in the temples of the Red One. He fears that yet those secrets may balk his design, though we ourselves cannot oppose him.

"And it was fear of you, Miles Kendon, as much as hatred of you for your destruction of his scorpion-god, that caused him to lay the trap for you on Arnac Rock. For he knows that you, with your elemental instincts of battle, will not cease to oppose him until you are dead.

"Even now, Bak-Toreg has gathered his powers of terror to descend upon our ancient city and wipe out even the soil upon which it stands!

"Lelural is to be crushed first beneath them. Then all the races of the upper world."

"You mean they are coming here?" queried Miles. "Now?"

"Already the disks are rising above the blue towers of Neng," came the voiceless response. "In the space of time you know as two hours, the reign of ruin will begin upon the edges of our city. Bak-Toreg has learned that we snatched you from his trap. He had waited for your death; but now he strikes without delay."

"Already?" Miles was dumbfounded. "And our defense? What preparations are being made?"

"None. I have told you that battle, violent resistance, is impossible. We cannot even contemplate the horror of combat. All thought associated with primal violence is painful. You know that we made a knife with which you killed the scorpion-god. The one who forged it is already dead; his mind was destroyed. All the primitive emotions of hatred and cruelty are far behind us; we can cease to exist, but we cannot undo the work of evolution."

"But surely," protested Miles, "you can find me another weapon—my plane, perhaps, with the machine guns—the one I left at Arnac Rock. It should be possible with your mastery of space, to bring it here, even in two hours. I might get Bak-Toreg, anyhow!"

The great black eyes were filled with pain. Miles read sheer agony in them, as if his words had been torture. And the tall, green-scaled body winced and shrank from him.

"That cannot be done. Even your thoughts of violence hurt me. Ages ago this crisis was foreseen and our forefathers were nearer the primitive than are we. Violence was distasteful to them, but they could contemplate it without incurring insanity. In preparation for this moment, they built the Tower of Dread and filled it with the engines of war.

"The tower still stands above the city. But none now living has ever entered it, nor could do so and remain sane. And none know the use of the implements of destruction stored there.

"Long this hour has been foreseen, though Time to us is a book but half read. But we can do nothing. It is the end—the finish, for Lelural and for the planet. We are done."

"This is madness!" Miles cried, unconsciously tightening his fingers upon the green-scaled arm. "Surely you can kill Bak-Toreg, or give me a chance at him. Even if it wrecks the mind of the one of you responsible, the others—"

"That cannot be," came the silent answer as Alú again winced with pain. "We might have accomplished it, even though it would have cost the reason and the lives of many of us. But Bak-Toreg foresaw the possibility. He took precaution."

"Precaution? What has he done?"

"The priest is flying at the head of his fleet of disks. Our power might reach him easily enough. But he has the girl, Su-Ildra, at his side, fettered to him. We could not kill the one without endangering the other.

"And he knows that to kill, or even to endanger, such an innocent is a thing that Lelural cannot do. Not even to avert its own destruction.

"The will to destroy is dead in Lelural. In a world that lives by war we cannot exist. We are done!"

"Not quite," said Miles. "In hot water, perhaps, but by no means done. You say there are weapons? In a tower? Where?"

"None of us can enter the Tower of Dread, nor even approach it easily. None of us know what implements of ruin it may contain, nor how to use them. But if you wish to go there, I can show you the way."

"Tell me where?" Miles implored. "Hurry!"

CHAPTER IV

The Tower of Dread

● Once more Alú expanded the color-flushed frail membranes that sprang from his shoulders. And the bright atoms dancing all about in the mist, Miles saw, condensed about them, seemed drawn into them. The gay appendages relaxed, and the thin green arm about Miles's shoulder drew him closer.

"Come," Alú urged silently. "We will fly.

"I see that you wonder at my powers. But we of Lelural possess bodily organs, developed through the ages by our science, that bring us in direct contact with universal energy. Space to us is not a barrier, but a bridge."

It seemed to Miles as though an unfelt wind had picked them up. The moss-carpeted terrace dropped beneath them. They floated swiftly over the low parapet, and the white tower dropped back behind them.

They floated in the air, while the strange city fled back beneath, hills and rolling plains bright with blue-flowering moss—graceful, colossal towers of snowy white, each uplifting upon its pointed spire a swirling ball of many-hued flame from which bright atoms poured off continually into the overhanging mist.

Few indeed of the Flame Folk did Miles observe and those seemed undisturbed by the likelihood of their immediate extinction. Some were standing in little groups upon lofty narrow terraces or strolling across the mossy blue spaces beneath the towers. One, apparently a female, was performing what seemed an exotic dance with the glory of her mantling membranes flung wide. Two more were gliding peacefully, side by side, high in the mist.

"We drain the dregs from our cup of a thousand thousand years," commented Alú. "We bid farewell to all existence. So it matters little, after all, if it costs my mind to carry you to the tower."

"Costs your mind?" demanded Miles. "What do you mean?"

"To take you to the Tower of Dread," replied Alú, "knowing that you plan a violent and frightful thing, outrages every law of my being. It is a situation you cannot conceive, full as you are of the tides of primal violence."

The green arm tightened convulsively about Miles's shoulders and he felt the bright-scaled, slender body trembling against his own.

Still they flew swiftly. Flame-tipped towers were swallowed in the mist behind, others born out of it ahead.

Then came into view a pylon of a different sort. Standing upon the summit of a rounded blue hill, it was loftier than any Miles had seen, and more massive of design. No flame burned at its top; it was crowned instead with a great dome. And its material was not white, but somberly red.

Alú shuddered again.

"That is the Tower of Dread."

Their flight became slower. Against Miles's side, Alú's tense body several times went a little limp, and they fell abruptly toward the blue moss. They were no farther than the foot off the hill when the reptilian being dropped weakly to the ground, and released Miles.

"I can endure it no longer."

The slender tall green body collapsed in an inert heap upon the moss, the flame-tints in the enfolding membranes fading to a deathly pallor.

Miles stood looking at Alú for a moment, astounded at his quite evident distress. He started to kneel beside him, and a faint thought reached him.

"Leave me. Go on."

Thinking once more of the armada even then flying to attack this defenseless race, Miles started running up the hill.

The massive base of the red pylon was perhaps half a mile away at the summit of the low blue hill; the thick dark shaft of it plunged up until it was dim in the sparkling mist.

This was a mad thing he was doing, Miles reflected as he ran—a hopeless thing. In a space now considerably less than two hours, if Alú were right, how

could he, a comparative savage, hope to learn to operate any weapons he might be fortunate enough to find in this ancient and deserted arsenal? How could he hope to fight more effectively than a Bushman suddenly put at the bridge of a submarine?

After all, how could one man hope to oppose all the maddened thralls of the Red One, led by the implacable Bak-Toreg and armed with the deadliest weapons of an ancient science of terror and destruction?

Then Miles stumbled into a deeper tangle of moss and forgot the hopelessness of his quest in the effort of his race to the tower.

The hill had obviously been long avoided, for upon the summit, the blue-flowering moss had lifted itself from a mere thick carpet to become a veritable jungle of tangled, wire-like filaments, through which Miles floundered, bewildered and exhausted, but intent upon the single desperate chance that fate had offered him.

Many precious minutes were gone, he knew, when at last he reached the vertical red wall of the tower, rising neglected out of the blue tangle, plastered with dry green lichens.

He stumbled for a few yards along the side of it, until he reached a massive ledge of dark stone, higher than his head. Leaping up against it, he hooked his fingers over the edge and dragged himself up out of the blue jungle to the surface of a broad, lichen-covered platform.

From the level of the platform, a great hall opened into the red tower. Miles entered and ran down it until he was stopped by a huge double door of some corroded, gray-white metal.

Thrust from the middle of the door was a heavy lever of the same argent-gray metal, pointing upward. After a moment's breathless hesitation, Miles seized it, tried vainly to turn it to one side or the other, then flung his weight upon it.

For a second, the mechanism stuck; then with a harsh, grating squeal, the lever came down, and the massive doors slid unevenly back into the dark stone walls.

Before Miles, the hall ran straight into the heart of the tower It was very dark at first and he stood uncertainly just within the doors, overcome again with the hopelessness of his quest. Dead air breathed upon his face, laden with the dust of many thousands of years, and he laughed bitterly aloud at the insane futility of his design.

Then lights snapped on through the length of the hall; huge, curved tubes suspended from the high ceiling burst into greenish incandescence, evidently set in operation by some automatic mechanism connected with the door.

Hundreds of feet in length, the hall reached before him, lofty and wide. A score of gigantic and unfamiliar mechanisms of gray metal, mounted on caterpillar tracks, all apparently identical, stood in two rows along the walls, grimly glistening in the greenish light.

Miles started toward the nearest and stopped in dismay.

Roughly, the machine resembled an armored telescope mounted on the tractor tank. But it was a huge affair, the great metal tracks lying along the floor for fifty feet. It was ridiculous to think of learning in an hour to operate such a machine; a moment's inspection convinced him that at least a score of men would be required for a crew.

Biting his lip, he paused a few seconds and then ran on down the hall. Surely there would be smaller, simpler weapons, that he might have *some* chance to understand and use.

A cross-passage appeared. He looked hopefully along it, saw that it was lined with huge gray machines, exactly similar to the others.

He neared the end of the hall. A tiny open door caught his eye. He ran to it, darted through, and found himself in a small square room, metal-walled and windowless, also illuminated with a greenish tube in the ceiling. It was completely vacant, and he turned back to the door.

The door had closed behind him.

● A trap! Miles moved toward the metal panel with a swift stride, his heart contracting in panic. It glided open, and he saw the crouching grim mechanisms in the green-lit hall. He stopped and laughed at himself.

"An automatic elevator, eh? These old boys must have been primitives sure enough, compared with Alú, to need elevators. Wonder what makes it go?"

In vain he looked for buttons on the door or beside it. But in a few seconds he found a row of black studs projecting from the floor, in a little niche in the wall.

Experimentally he pressed one of them with his toe.

The little room leapt upward breathtakingly.

Miles stood waiting, his heart thudding with excitement, just within the door. He felt the cage stop; the door slid silently open.

Beyond was a second hall, ablaze with greenish light. The floor was stacked with featureless black cylinders twice the size of gasoline drums, one upon another. Numberless thousands of them the hall contained, walling narrow corridors. What they were Miles could only guess. Explosive? Gas? Fuel for the great machines below? At any rate, in his present plight they meant nothing.

He pressed the next stud.

The door flung shut, the car mounted, it opened again.

He looked out into a space vast as an airship hangar and evidently of similar purpose, for within its dusky, green-lit cavern loomed four gigantic mechanisms, looking a little like airplanes and somewhat more like submarines.

Shaking his head, he returned to the car and touched the next stud, the one at the end of the row.

Emerging again, he found himself beneath a hundred-foot dome of polished silvery-gray metal that was shimmering in glaring greenish light. Above him loomed a huge black tube, mounted like a telescope in massive cymbals. At the end of it next to the floor was a seat attached to the tube, surrounded with levers and dials and hand-wheels.

"A telescope, eh?" Miles muttered. "But what for, with miles of solid rock between here and the stars?"

He was turning back to the cage when a chiming musical note caught his ear. Stopping, he saw that the sound had come from a curious tall metal cabinet at the side of the dome.

As he looked at the cabinet, the front of it was suddenly illuminated like a cinema screen and he saw upon it a picture of the dome's interior and of the enigmatic great machine behind him.

Wonderingly, he moved closer.

A green-scaled being somewhat resembling Alú, though shorter, heavier of build, and completely lacking the flame-hued membranes, had entered the pictured dome. He seated himself at the end of the great tube and began moving wheels and levers. The tube moved, lifting him on the seat, and he put his eyes to a hooded instrument above the massive cylinder.

That picture then vanished abruptly from the screen, and in its place was one of the red tower, standing alone above blue hills, with a strange flying machine sweeping down toward it. Evanescent light shimmered about the dome, and the machine disintegrated, fell in a rain of dust and crumbling fragments.

Then the green-scaled being was again upon the screen, still sitting at the end of the cylinder, now seeming much enlarged.

"The thing *is* a weapon!" Miles breathed eagerly to himself. "And *some* weapon! If I can just see how he operates it! And that's what the picture's for, in case somebody forgot!"

Intent, he dropped on his knees in front of the bright screen.

Eagerly he watched, as the claw-like hands of the reptilian being moved each lever, and then pointed out the appropriate result. One wheel moved the ponderous tube vertically, another horizontally. The mark appeared to be found by peering into the hooded instrument, which was itself adjusted by a dial above it. The unknown energies of the weapon were re-

leased by pressure upon a certain key, and a brief series of operations sufficed to set it again for a new discharge.

The illustrated lesson was ended. For a moment the screen was dark. Then the gong rang musically again and it brightened. The same series of pictures was repeated. Miles watched them again, and a third time.

Then he mounted the seat behind the heavy cylinder and put his hands to the controls.

The thick tube swung noiselessly as he touched the wheels. He was lifted far from the floor.

Eagerly he put his eyes to the hooded device before him. Somewhat to his surprise, he saw as through an oval window the base of a white tower and the flank of a blue hill beyond. The instrument, as if using the principle of television, penetrated the dome and the shrouding bright mist without.

It was telescopic, the degree of its magnification regulated by a dial above it. Once more he touched the controls and the outside world glided past the oval window. He followed the blue slope to a broad placid stream and traced the stream to the shore of the purple sea.

In the center of the oval, remaining stationary as the picture moved, was a little green cross. That, he knew, must be the sight.

Then he gasped in alarm.

A long line of violet flying specks had entered the oval panel. Quickly he increased the magnification, holding the instrument upon the foremost. Sharp and distinct as if in the field of a powerful telescope, he saw the flier from Neng—a railed disk of violet metal. Five gigantic Amazonian women, red-skinned, violet-armored, stood behind its rail. A dwarfish, black-robed priest of the Red One leaned over the controls. Piled upon the deck were the ominous black cylinders of bombs.

He moved the instrument back along the line of fliers that were descending upon Lelural with their burdens of ruin and death. Eagerly, yet filled with dread, he scanned each until he found the sight he feared.

One disk-flier raced a little above the others. At its controls stood Bak-Toreg in the loose black robes of his priesthood, his seamed yellow face hideous with triumphant passion that was only accentuated by the benevolent mildness of his golden eyes.

Su-Ildra was at his side, head hanging wearily, face hidden by the disarray of her lustrous coppery hair. Her wrists were fettered behind her back and fastened to the yellow priest's belt with a short chain of violet metal.

A gigantic scarlet Amazon was near him, thumbing the edge of a violet sword. And a second dwarfish orange-skinned priest bent intently over a small cubic black box.

Miles's heart sank at seeing Su-Ildra thus carried in the midst of the enemy. Even if this ancient weapon responded to the uncertain skill of his tyro's hand, after its numberless centuries of disuse, never could he hope to destroy Bak-Toreg with it, without sweeping the lovely girl also to death.

CHAPTER V

The Forgotten Weapon

● "Now, does it?" muttered Miles. "Or doesn't it?"

Again he examined the control wheels, rehearsed in his mind the series of operations he had learned from the picture lesson on the little screen.

"Eh? What was that?"

The tower had been shaken by a sudden tremor; the air throbbed with a dull reverberation.

Miles put his head back to the hooded vision panel.

Precious time had been consumed by his climb through the moss-jungle on the slope of the hill, by his search of the tower and his study of the picture on the screen. Had the abrupt vibration been the tremor of a bomb? Had the attack already begun?

The disk-fliers had been lost from the oval view-plate. Miles manipulated the

unfamiliar controls, decreasing the magnification until he could see a wide area.

At last he found the fleet, a swarm of violet specks, circling high. Low blue hills were beneath them, scattered with gigantic white towers.

Increasing the magnification, he saw tiny black particles raining from the disks.

Bombs!

Ruin plunged upward when they touched the ground. Débris leapt skyward in black fountains. White towers buckled and fell. Yawning, ugly craters were left, hideous raw scars in the smooth blue flanks of the hills among white shattered stumps that had been inspiring pylons. Greenish clouds of gas coiled over the hillsides like amorphous many-tentacled monsters; behind them the flowering moss was left sere and black.

Dull reverberations of explosions shook the tower continually.

Again Miles moved the dial that increased the magnification until he could distinguish the figures upon the disks. Once more he found Bak-Toreg, and Su-Ildra, chained to him, still drooping strangely, and the red Amazon and the priest with the puzzling black box.

Then he turned the tube and centered the green cross upon a disk that was far from the one Su-Ildra rode.

He touched the key that discharged the weapon.

The result was immediate and, even to Miles, astounding. As the machine in the picture had done, the disk-flier crumbled. The violet-armored Amazons, the black-robed dwarf by the control post exploded into puffs of white dust. The machine, the piles of black bombs upon the deck disintegrated, spilled in dusty whirling streamers.

The flier became but a dissipating gray smear across the sky.

Miles had no idea, at the time, how the ancient weapon functioned. Later he came to know a little more of it. He believes that the tube projected a field of force which in some way momentarily neutralized the force of cohesion which binds together the molecules in any substance. No other theory seems to account for the instantaneous explosion of all matter before the weapon into impalpable, molecular dust.

Eagerness of battle in him, Miles hastily adjusted the mechanism for a second discharge and turned it upon another flier.

Again he touched the key and the ship upon which the green cross was centered became instantly a gray, spreading wind-ripped cloud.

Quickly, he found a third mark, and a fourth.

Then the enemy struck back at him.

On three of the disks were thin cylinders mounted like howitzers. Scarlet Amazons were suddenly furiously busy about them, directed by orange-skinned dwarfs. Yellowish vapor puffed from them.

Instinctively, Miles crouched down in his seat.

Deafening waves of sound shattered against his eardrums. The tower lurched beneath terrific explosions. The green tubes that illuminated the dome flickered twice, and went out, leaving Miles in complete darkness.

For a moment, panic was near.

But the oval view-plate, when he looked back into it, was not dark; he found that he could operate the controls by touch.

Swiftly he brought the green cross upon the disk-fliers that carried the three thin cylinders. One by one they dissolved into expanding swirls of dust.

But two of the cylinders must have been discharged a second time, for twice again the tower shuddered beneath terrific explosions. Miles felt hot blood dripping from his nostrils and his ears were ringing from concussion.

Now he handled the controls more deftly, more rapidly, even in the dark. The violet disks were going swiftly.

At first the fleet must have numbered six score fliers. Half of them were gone when they ceased to rain bombs upon the white towers at the city's edge and descended in an angry swarm upon the Tower of Dread.

Miles worked swiftly, sparing only the fliers that were near the one which carried Su-Ildra. The surviving ships were almost hidden in the gray dust of those destroyed.

Again the tower quivered in agony beneath titanic hammers of explosion. Miles was battered by waves of sheer sound until his whole body shrieked in protest. His head drummed and sticky, salty blood ran down across his lips.

He clung doggedly to the controls.

Then some other weapon must have been turned upon the tower.

The darkness within the dome gave way abruptly to a weird purple-red luminosity that leapt crackling in sparks and flickering sheets from all projecting metal objects. The air immediately seemed intensely hot. Miles felt that his skin was parched. Intense pain filled his lungs; an iron ring of agony closed about his throat; he was unable to draw breath.

The darkness and terror of unconsciousness lowered its wings upon him. He fought them back with sheer power of will until the green cross was centered upon a disk-flier where three black-clad priests were suspiciously busy over some half-visible mechanism.

In the last instant of endurance he pressed the key.

The disk-ship swelled into a white dust-cloud.

And instantly, the dome was dark again and cool. The sudden pain was gone from Miles's lungs. He inhaled delightful air.

Without pause, he brought the green cross upon ship after ship.

Twelve were left when they scattered and fled.

Miles followed them. The range of the ancient amazing weapon and the power of the telescopic instrument appeared unlimited.

Eleven of the fleeing machines disintegrated into swirling dust.

He brought the other into the viewplate.

Bak-Toreg was on its deck, dwarfed, shrunken, his sickly-hued yellow face twisted and leering with unfathomed evil —Su-Ildra chained at his side, drooping, lifeless, face hidden by loose, glistening hair—the red Amazon, erect and uncompromising in her metal harness of war. The second orange-skinned priest was still hugging in his arms the enigmatic black cube.

The disk fled as he watched, back in the direction of Neng.

The elation of victory cooled from Miles's veins; despair again filled him. What, after all, had he accomplished? A few disk-fliers were destroyed, but Neng could build thousands more. The city of the Flame-Folk was safe for the moment, but Bak-Toreg was still free to attack again.

The victory was but temporary and he had failed Su-Ildra. Miles clenched his teeth and stared into the view-plate.

He was helpless. A pressure of his finger would destroy Bak-Toreg—and Su-Ildra also. Though retreating, the yellow priest had triumphed. Biting his lip, nails cutting into his palms, Miles watched the machine dwindling within the little oval panel, until even the extreme magnification of the instrument failed longer to bring out the features of the tiny figures upon it.

Then, weary, hopeless, he left the seat at the rear of the great cylinder and stumbled across the floor of the darkened dome to the door of the elevator.

He was back in the tiny square cage where the green light still glared, when inspiration struck him.

"By George, he can do it!" Miles cried. "Why not, when he could pick me up in Neng and carry me to Algiers. Why not?"

He jammed his toe upon a stud that sent the car plunging down.

CHAPTER VI

The Jest of Doom

● Miles had no conception of the destructive forces that had been loosed upon the tower until he came out upon the broad platform before the entrance. He found it heaped with raw earth and stone flung from the hillside below, scattered

with titanic red blocks, half fused, that had been torn from the walls of the tower.

The once blue moss that had blanketed the hill now lay flat, sere, withered. Long gashes were furrowed through it to living granite. The air was yet laden chokingly with acrid fumes.

Above, the red walls of the tower were scarred and battered unbelievably. But, Miles sighed thankfully, they had stood. The fathers of the Flame-Folk had built well; the tower must have been armored mightily.

A few moments Miles paused, bewildered by this story of the holocaust he had escaped so narrowly. Then at thought of the disk-ship even now bearing Bak-Toreg and Su-Ildra back to evil Neng, he leapt from the platform and started running down the cataclysm-pitted hillside toward the spot where he had left Alú.

Across fresh craters and over new mountains of naked rock he plunged, gasping in the acrid fumes that still polluted the air. Apprehension grew in his heart as he ran. Perhaps Alú had been fatally hurt when Miles left him — the strange being had looked very weak and ill, lying motionless on the blue moss. Or perhaps he had been destroyed, physically or mentally, in the battle with the raiders. Or it might even be that if he still lived, unharmed, he could not do the thing that Miles desired.

At last, panting, wet with sweat and coughing from breathing noxious gases, Miles reached the foot of the hill. Here were no more craters and the blue moss was blackened only in spots. He looked where he had left Alú, but saw nothing of the reptile-being.

He was sinking fast into the despair of complete helplessness when a voiceless question penetrated to his mind.

"Miles Kendon, you seek me?"

Startled, Miles turned to see the green-scaled being, glorious, flame-flushed mantles half extended, dropping to the sere moss beside him.

"Yes, Alú," he gasped. "You were not hurt?"

"I was not harmed bodily. But bringing you to the Tower of Dread, the knowledge that I was contributing to the fearful thing that has been done here, has made a scar on my mind that will never be erased."

"You must help me again," Miles cried. "Twice you have moved me across space —I don't know how. Once from Neng to Algiers, and from the Rock of Arnac to here. I want you to put me on Bak-Toreg's flier."

The huge dark eyes of Alú scanned him soberly.

"That would be another terrible thing, and a foolish thing for you. You could only sacrifice yourself. You are but one against several. You have no weapon and the several are armed. You can but die needlessly."

"That's not the question! *Can* you put me on the disk?"

"Without difficulty," was the silent reply. "I can fold Space as readily as you double a sheet of paper. I can reach through hyper-space where d i s t a n c e means nothing. But you are unwise to wish the thing."

"No matter!" urged Miles. "That's our play. And please hurry!"

"Come."

Miles stepped close to the tall, strange being. A green slender arm, delicately scaled, reached out; a small hand, thin fingers tipped with scarlet claws, was laid upon his shoulder.

He looked up into the great black eyes of Alú. Memory of those orbs was to live with him. Broad windows in the queer, scarlet-crested head, out of which looked sorrowful laughter, intolerable weariness, pain unutterable, they were.

Miles looked into the great eyes. Suddenly they seemed to expand before him, and at the same time, to push him away.

One moment of reeling motion, and he was standing upon a dipping metal deck.

The city of white towers was gone with its blue hills and the bright, mysterious mist. He was high beneath the silvered emerald of the dome of Xandulu, the

seven close-grouped suns above, the purple sea beneath.

Air rushed past.

He stood on the flying disk. The scarlet Amazon was beside him. The priest huddled over his precious black box at her feet. Black-robed Bak-Toreg stood at the control post, listless Su-Ildra chained at his side.

The flat, circular disk of polished violet metal was not a score of feet in diameter; the flimsy metal rail at the rim, by which the woman stood, was not a yard high. The control post, where the high priest stood, was at the center of the deck.

Surprise was Miles's only weapon and he took no chance of losing that through delay. The red woman alone was more than his equal in strength, had she been without her violet blade. In one second his eye took in the situation. In the next he had thrust his foot in front of her ankle, flung his weight against her hip.

With an angry, deep-throated bellow of surprise and warning, she stumbled against the rail. Miles changed his footing, clutched and heaved; she toppled over the metal bars, fell toward the far dark sea. It was a thing he did not like to do, but, as he put it to himself, it was his life or that of Su-Ildra.

He turned, in the next instant, upon the black-robed priests.

● The one with the black box had sprung to his feet; Bak-Toreg had stepped toward him from the controls. The two stood side by side, facing Miles. Searching the seamed, hideous yellow visage of the high priest, looking into the twinkling, kindly golden eyes that merely emphasized the hellish malignancy of his inscrutable features, Miles could find nothing of surprise or fear.

"Stay, stranger," said Bak-Toreg, in the resonant voice that was so singularly deep for one of his shrunken and emaciated form. "Stand as you are. One step means the end of the planet!"

"Yes?" Miles said, in the Aral tongue.

"You know that we are servants of the Red One, the Supreme Destroyer, whose temple *you* desecrated," boomed the priest. "You know that the high purpose of our faith was ever to plunge all things into sacred annihilation!

"Lifetime upon lifetime the loyal have labored in the temples, searching out the secrets of matter that all material things might in time be rendered unto Conquering Ruin.

"Success at last has come. The Red One suffered destruction at your vile hands only that all might follow him into Chaos. He smiled upon our labors, and they were crowned with triumph.

"In this vessel—"

Bak-Toreg paused and laid a gnarled yellow hand upon the black box hugged in the arms of the other priest.

"In this vessel is the seed of annihilation. Age through age, in the natural course of events, all matter, all atoms of every substance break down into primal energy and the energy flows out into the Void, and death and cold and stillness reign.

"Cold, Death, Stillness—they are Destruction."

The shriveled hand fondled a little lever on the side of the box.

"I have but to touch this key, and our planet is rendered in one moment unto Annihilation. The work of eternities is completed in a breath. Every atom of the planet releases its store of prisoned energy in a single devouring flame.

"And that is not all!"

Into the twinkling golden eyes had crept a mad light of fanaticism.

"That flame will spread ruin from world to world, from star to star! Like a fever, annihilation shall spread. The whole universe shall be gathered into sacred doom!"

Miles stood looking at the two dwarfish priests, at Su-Ildra beside Bak-Toreg. The down-cast eyes of the listless girl were half-closed; she seemed unaware that Miles was present.

"What's the matter with Su-Ildra?" Miles demanded in sudden concern, disregarding the black box and the priest's

fantastic pronouncements. "What have you done to her?"

"I administered a harmless drug," said Bak-Toreg. "It was required to prevent any chance of her interfering with our plans. It will disappear when she sleeps —if she does sleep before the planet is destroyed."

He took the black box from the hands of the other priest and placed one twisted claw over the projecting lever.

"One instant's pressure," his deep voice boomed again, "and the earth flames into atomic disintegration. It is you, Miles Kendon, who sent the Red One into Oblivion to prepare the way. I am honoring you beyond your deserts. I am offering you an opportunity to save the planet your action condemned."

"How's that?" demanded Miles, narrowly watching him.

"Leap over the rail, and I shall spare the planet and even the life of this girl at my side. For without you, Lelural has no power and the Red One through me may rule the planet, undestroyed."

"And if I don't care to leap?"

"I shall press the key."

Miles studied the face of the priest—a mask of wrinkled parchment, twisted into a yellow leer of supernal evil which was but intensified by the benignant mildness of the golden eyes. No fear could he find there—no doubt, no indecision.

The gnarled claw hung eagerly over the lever.

Three slow heart-beats and Miles had made up his mind.

"You aren't going to press the lever," he said. "Perhaps, as you say, the fate of the world is in your hands. But you don't want to die. You won't press the lever.

"Instead, you are going to take a chance on killing me with whatever other weapons you happen to have. I am unarmed, remember! And the odds are two to one."

Deliberately he advanced across the bright deck. One step. Two. Three.

Bak-Toreg's emaciated claw hovered over the lever on the side of the box. It trembled. Once it touched the lever and was snatched away again.

"Your faith is a joke," Miles said. "Annihilation may be splendid in theory. But in practice—"

Black-toothed mouth hanging open, the second priest stared at the box in breathless fascination.

Miles stopped in front of Bak-Toreg. His hands reached out and closed upon the box. He lifted it slowly from the arms of the priest. Bak-Toreg's claw darted once more at the lever and jerked back from it as if it had received an electric shock.

Deliberately, Miles tossed the black box over the rail.

Abruptly galvanized, both black-clad priests leapt into savage activity. A thin blade of violet metal came as if by magic into the hands of the second and Bak-Toreg himself produced a little black cone that was obviously a weapon.

Miles's hands moved as the priest's sought the weapons.

A single resistless blow laid the second priest groaning on the deck. One steel hand closed on Bak-Toreg's wrist before he could use the enigmatic cone. The other found his throat and did not open until the high priest of the Red One was dead.

The groaning alcolyte followed his black-robed master over the rail.

* * *

The rest may as well be told in Miles's own words as I heard them whispered from the phones in the *Gay Moth's* tiny radio room, near the dawn of a quiet morning upon the sea.

"I broke the chains off Sue's wrists and laid her on the deck. She didn't seem to recognize me at all; her body was oddly limp and she seemed to have no will of her own. She lay there as if in open-eyed sleep.

"I was standing by her, wondering what I could do, when I looked up and saw Alú beside me.

" 'You have done well, Miles Kendon,' his thoughts came to me. 'The threat of

Neng and the Red One of Neng is ended with the death of Bak-Toreg.'

"'But what's wrong with Sue?' I asked him.

"'She has been drugged. I will wake her. The shadow of peril need not fall between you again.'

"'Then she's all right?'

"'She will be. I will set you both back on Arnac Rock—the destroying vine has been removed.'

"'Farewell. If you need him, do not forget that Alú is a friend.'

"I was trying to thank him when he bent and lifted Sue for a moment in his green-scaled arms and then laid her back on the deck, very tenderly. For another instant he was standing over her, his bright mantles spread out and flushed with vivid color. I saw that all sorrow and weariness had vanished from his great black eyes. They were glad.

"Then—all in a split second—we were back in the little house on Arnac Rock. Sue was lying on a couch and I was standing by her.

"A minute later she awoke.

"She was a little surprised to find herself free from Bak-Toreg and back on the rock with me, but not exactly grief-stricken. Her strange forgetfulness was gone. Yes, she knew me, all right."

Miles chuckled reminiscently.

"Well, I guess that's about all, Brandy. Sue and I have been on Arnac Rock most of the time since—it really doesn't seem like eight months. But the plane was still where I left it when I first came down. Sue and I have been junketing about Xandulu a bit. We've been to Aral to visit the survivors of her people—she's a sort of princess, you know. And twice we've been back to Lelural to call on Alú.

"We'll be up to see you, Brandy, when I've seen all that's new in Xandulu. Till then, Sue sends her compliments and invites you to drop in—just a hundred miles down, you know."

Since that night, more than three years have passed, but Miles Kendon and his bride have not yet returned from Xandulu.

THE END

WONDER STORIES *presents*

The cream of contemporary Science-Fiction. A few of the forthcoming tales are:

●

INTO THE INFINITESIMAL by Kaye Raymond is the feature novelette for our June issue. Our readers have always greatly enjoyed an occasional story of this type, in which, as the title suggests, we are taken into the world of the sub-microscopic, where [illegible] are solar systems and electrons are worlds. Baffling mystery, thrilling action, perilous adventure, human emotions, and accurate science weave their way through this fantastic story. This will establish our new author, Kaye Raymond, as one of your favorites.

THE MAN FROM BEYOND by John Beynon Harris is an interplanetary story with a new, refreshing plot. What would you do, were you faced with the situation that confronted Grats? Never before had a man been struck with such a terrible revelation—never had anyone been forced to learn a secret of such monstrous proportions. You will sympathise with Grats and pity him, and thank your lucky stars that you were not in his place. Here is a vivid story which you will long remember.

THE ROBOT ALIENS by Eando Binder. Too many authors assume that extra-terrestrial visitors would be greeted with "Welcome to our Earth!" upon their visit to our planet, but human nature is a very mysterious thing. This story is particularly realistic, for it gives a true portrayal of how creatures from space *would* be received by the "intelligent" creation known as Man.

THE CONTROL DRUG by Benson Herbert is based on a most unusual idea. Self-control, we know, is to a human as the governor is to the phonograph. It limits our emotions and keeps us rational. What would a man do were he to lose this quality entirely? His slightest desires, whether good or evil, would become mad determination. Our author gives his version of the chaos that would result.

Watch for these stories in the next few issues, among many others by the leading authors in the field

WONDER STORIES—*ON ALL NEWSSTANDS*

EARTHSPOT

By Morrison Colloday

(Continued from page 1133)

Six weeks after the tidal wave, our instruments registered the first decline in magnetic intensity since December eighteenth. At the end of another two weeks, it was possible to restore telegraph and radio communication, subject to occasional interruptions.

● Over a year has elapsed since we saw the vortex rear itself to the sky up in the Arctic, and the oceans have not yet receded from the land they flooded. There has apparently been a change in world climatic conditions, though we, of course, do not know yet whether it is to be permanent. Northern New York, where I am writing this, looks and feels like southern Florida. It is nearly Christmas and there has been no fall in temperature since midsummer.

Word comes from far northern Canada that vegetation is in full bloom and that there is no trace of ice or snow.

The *Carnegie II* has been repaired, and on January first, Ogden is starting on another expedition to the Boothia Peninsula and the site of the north magnetic pole. On his return, he expects to have concrete results to report which will probably throw considerable light on the mystery of terrestrial magnetism.

THE END

DRUSO

By Friedrich Freksa

(Continued from page 1113)

she looked at the child and we understood what she meant; Life itself, the eternal, that which goes on from age to age.

Fortunately for us, the Drusonian observation-flights had been withdrawn and only the regular fliers passed over, one in every three days, by our observation. Therefore we had decided to make the break for the north on the evening of the first day when one of the swarms had just passed over.

● Our motor, which had already given us such good service, was built into a sailboat which gave us more security against the waves than the flat-bottomed river boat in which we had descended the Rhine. It was a sharp-prowed vessel with an outrigger, a ship of the type in which the Atlanteans of old had ventured to circle Africa. Their last remnants had remained in the South Seas, and about 1000 years after the birth of Christ, had attained from the Malay Peninsula to the distant islands in the same kind of boats. And such a boat, once more discovered by men, was to carry us off to the safety of the north.

We took Judith, whom Thankmar and his people now called the Mother-Goddess, on board. How uncomfortable were the narrow proportions of this little craft after the huge traveling machines of three hundred years before. And the sea was high, driving hard against the prow of the vessel that clove through them in a whirl of foam. The big sail caught the wind; we let the machine lie idle and the boat raced rapidly through the water while sea-gulls soared above us. I could not avoid thinking how different a voyage this was from one of our own time. Day came and night, and day again; we needed six whole days of voyaging before we saw tall summits capped with snow rise up before us and dark ravines slide back between them. Norway's fjords had remained the same, at least. We slept little. The rushing sea seemed to keep us awake even in our dreams. The sunlight was a grey-silver here and the shadows of the long winter night were beginning to reach out over these latitudes. The heavens seemed nearer and the little twinkling stars shone green and red.

(Continued Next Month)

Science Questions and Answers

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

THE ASSOCIATE SCIENCE EDITORS OF WONDER STORIES

are nationally-known educators, who pass upon the scientific principles of all stories.

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Professor William J. Luyten, Ph. D.
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Dr. Marjorie E. Babcock
Acting Director, Psychological Clinic, University of Hawaii.

ZOOLOGY

Dr. Joseph S. Yochelson
Yale University.

The Velocity of Light

Editor, SCIENCE QUESTIONS AND ANSWERS:

Whatever a man can do, he can better, and if a person can leave the attraction of the earth, or counteract it, if only for an inch and a fraction of a second, which anyone can do by the simple process of jumping into the air, he can improve on it. Then space-travel is not an impossibility and the device to accomplish it must be logical.

The space-time continuum theory, giving us some basis for attributing gravity to an external instead of internal source of matter makes the construction of a gravity shield at least seemingly possible, but predicates, in the author, a more complete knowledge of the limiting velocity of light than I have. I have therefore set this light moving through a series of problems in the hope that you can supply me with the answers.

We will let all the problems embrace the same objects, changing only their relative motions.

We, the observers, will be in automobile A on the right hand lane of a two-car highway stretching to infinity, fore and aft.

An automobile B, facing in the opposite direction, occupies the lane on the left.

Auto A is capable of infinite speeds, either forward or backward, but its occupants (ourselves) are not conscious of this motion, attributing all changes in speed to the outside objects, which are only the other car B, and the light.

Auto B is capable of only one speed, 40 m.p.h., forward.

Disregarding all recent experiments which tend to show that the speed of light is not constant, we will fix it definitely, for the problems, at 186,000 miles per second.

Auto B discharges light in blobs which leave it at that speed and continues forward, down the left-hand lane, without diffusion, to infinity.

Now, with both cars at rest, car B discharges light. It then, by the hypothesis, passes car A at a uniform velocity of 186,000 miles per second.

With car B set in motion at 40 m.p.h. (which velocity it hereafter maintains) the light now passes car A at the uniform velocity of light and is followed by car B which passes car A at 40 m.p.h.

Car A is now put in motion at 40 m.p.h. At what speed does the light pass car A? Car B passes car A at 80 m.p.h. The increase or decrease in the time interval of separation of the two cars seeming, to us, in car A, and not conscious of any personal motion, to be an increase or decrease in the velocity of car B.

Problem Two: Car A forward at 186,000 miles per second. Car B forward 40 m.p.h. Light passes us at what speed? Car B passes car A at 186,000 miles per second *plus* 40 m.p.h.

Problem Three: Car A forward at 186,000 miles per second. At what speed does the light pass?

Problem Four: Car A *recedes* at 40 m.p.h. At what speed does the light pass it? Car B never passes, but maintains a constant distance.

Problem Five: Car A *recedes* at 186,000 miles per second. By hypothesis, the light can never pass it but maintains a constant distance, car B being left behind.

Problem Six: Car A *recedes* at 186,000 miles per second and the same question is asked.

This may seem at first glance to be a continual repetition of the same question, or at least, one requiring the same formula to solve, but it does not so continue to seem on closer analysis.

If we are to have our characters wandering promiscuously through space and take some cognizance of the extent of space, we must have them move at close to the limiting velocity of matter (if there is such limit) or else just romance, distance being meaningless.

If they are moving at close to a limiting velocity, and that is the velocity of light, and light maintains a constant speed in relation to objects passed, regardless of the motion of such objects, then our travelers' conceptions of distance and matter will be entirely foreign to our ideas. A difference of three hundred miles per second from the limiting velocity will then be of utmost importance.

Conversely, if our observer is moving at 186,000 miles per second, and light was affected by his speed, rays from in front would impinge upon him with approximately double volume per time unit; they would complete their wave movement, in his eyes,

in one half their normal time, from which he would turn to a rear view and encounter light waves overtaking him at 800 miles per second with an enormously extended wave length.

Leaving out the physical effects on the retina of the eye, we have a condition where the light waves themselves, to all observational deductions, are so enlarged.

I thank you for your attention and apologize for my verboseness, a failing which I am very slowly overcoming. I wish you would give me some information on the peculiarity of the behaviorisms of light in your interesting science department.

WILLIAM L. MCMILLAN,
Lyndhurst, N. J.

the speed of light, would not notice any more difference in the aspect of the light impinging upon them than if they were both stationary.—EDITOR.)

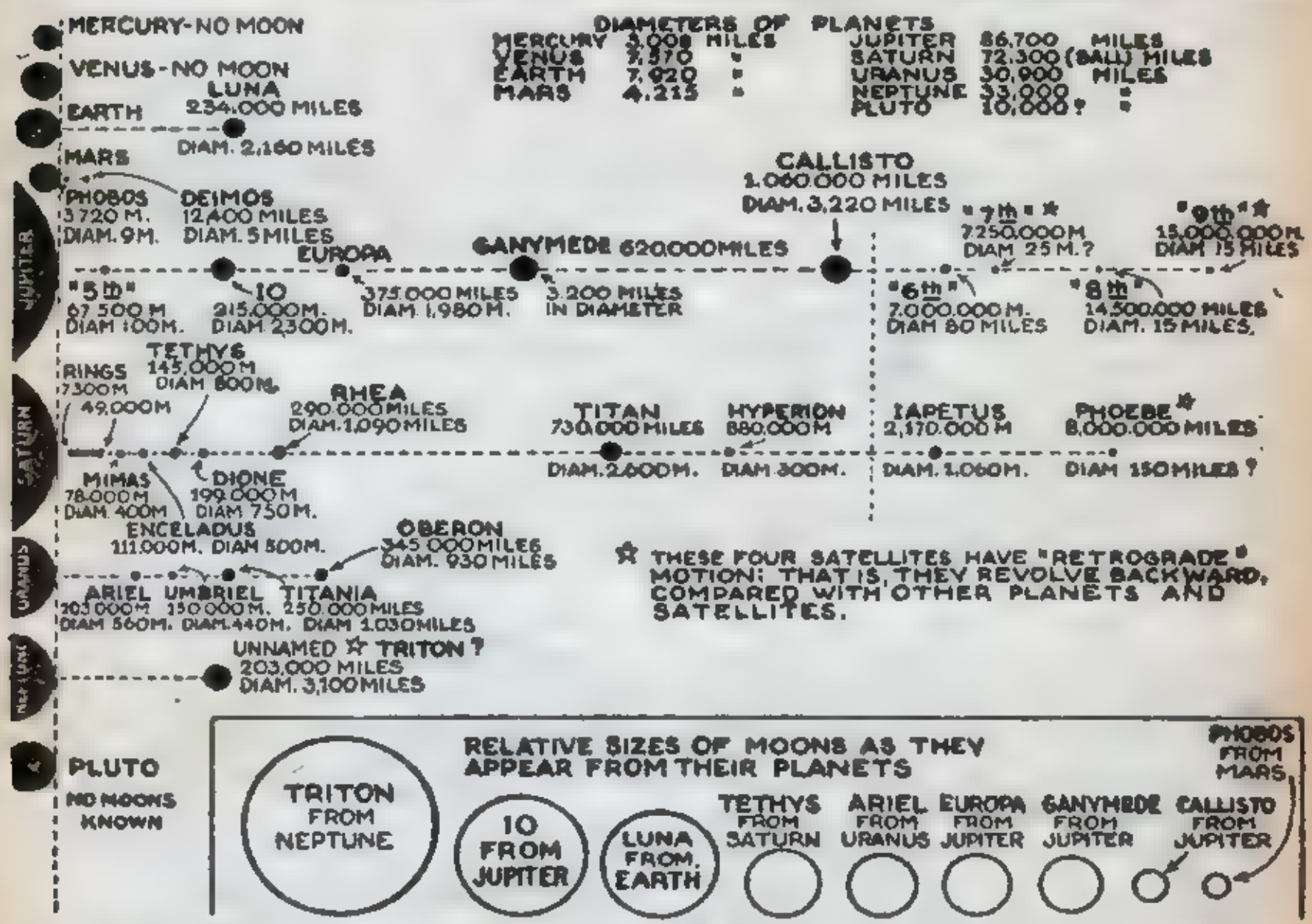
The Moons of the Planets

Editor, SCIENCE QUESTIONS AND ANSWERS:

Will you please illustrate in your SCIENCE QUESTIONS AND ANSWERS the moons of all the planets in the solar system, giving their distances from the various planets around which they revolve?

JOHN WIMM,
Brooklyn, N. Y.

(You will find on this page an illustration giving the information you require.—EDITOR.)



Moons of the different planetary systems, and the average distances separating them from the surfaces of their planets; the moons of Mars and the outer moons of Jupiter and Saturn are displaced to show them on this scale. The scale of diameters is approximate, and those of the smallest moons are only estimated by astronomers. The "months" vary from 7 3/8 hours to 745 days. Lower right, discs of some of the moons, compared with our own, as seen from their respective planets.

(It has been satisfactorily determined by various methods that light travels 186,000 some odd miles per second. This means that light leaves its source at that speed and continues at the same rate practically unchanged. Whether the source is moving or not makes no difference to the particular photons which are leaving it. If the source is moving in the direction of the light which is leaving it, the light still has the same velocity, but *appears* to be considerably less to the occupants in the vessel, depending upon the speed at which the ship is traveling. As none of these tremendous speeds have been attained, we can not tell the exact phenomena this experiment would produce, but it would logically cause a different effect upon the occupants than if the ship were stationary. The greatest speeds that our airplanes have reached, somewhat over 400 m.p.h. for short duration, would not be great enough to make the slightest difference in the speed of light affecting the aviator. The speed of the plane, 400 m.p.h. against the speed of light, roughly 700,000,000 m.p.h. cannot even be compared. The cars on the track, A and B, which could not travel very fast in comparison to

Killing the Ground

Editor, SCIENCE QUESTIONS AND ANSWERS:

Perhaps this question will not be considered strictly scientific, but it certainly requires science to answer it! I have been a faithful reader of WONDER STORIES for some time and would certainly appreciate an answer to this question.

Here it is—Is there a chemical that will completely kill the ground so that nothing will grow there? I have a tennis court and desire to kill the grass and weeds on it and leave the ground bare. If you know of any method of accomplishing this at not too great an expense, I would appreciate very much any enlightenment you will give me.

RALPH RAWLINS,
Ennis, Texas.

(Offhand, we can name two chemicals that will suit your purpose. Salt, the most crude but inexpensive, will help a great deal in killing the vegetable matter

(Continued on page 1178)

The Reader Speaks

IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good, old-fashioned brickbat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps, to cover time and postage, is remitted.

The Man With the Longitudinal Head

By Paul K. Chapple
New York City, N. Y.

(with apologies to David H. Keller, M. D.)

Thurlow Glinkbottom shrieked with joy—and no wunder!

He had just completed reading the October issue of *Marvel Narrations*, that fictional-science publication of unquestioned merit and rare worth. His sudden burst of rapturous noise was caused by a story therein—a tale which innocently laid bare that secret of secrets: How To Become An Author Who Can Sell His Stuff.

For years, Glinkbottom had sweated over his faithful Blundergood typewriter in the hope that sometime—some day—somehow—he would pound out a story bearing the earmarks of publishability.

But his labor was for nought! The pretty pink, green, and yellow rejection slips were so numerous, so consistent, and came with such astonishing regularity, that Glinkbottom was able to paper his entire bachelor apartment with them—yea, from varnished floor to kalsomined ceiling.

But, *woe*—oh, ecstasy! The wisdom of centuries was loosed, and Glinkbottom was the first to avail himself of its glories.

"Pain!" cried the struggling author. "Pain—and plenty of it!"

With what might be termed a great degree of haste and precision, our hero constructed, with pounding arteries, a machine of most unusual and unique properties.

It was the world's first *head-squasher*—an instrument to aid the budding and potential author. Much in the manner of a carpenter's vise in appearance, 'twas designed to fit snugly and firmly about the subject's head—wood against wood, as it were. Two hand-turnable screws were conveniently placed so that pressure, from time to time, could be increased by a mere twist of a finger.

Joyfully, Glinkbottom adjusted the completed instrument upon his throbbing cranial member, and began, without ceremony, to quietly *squeeze* a story from his heretofore sterile brain.

Oh, how he squeezed! Finally, he sat at his Blundergood and began to write—and write he did! Pausing only long enough to add another squeeze, he typed far into the night—and was still hard at it when the first rays of a blossoming morn crept across the dewy fields.

His story was interplanetary. Glinkbottom had no time for hackneyed plots and situations, so he *originated* an idea in science-fiction—a war between the Earth and Mars!

Among his characters were Morningmouth, clear-eyed Earthern hero; the ugly Evenyourbestfriendwonttellyou, Commander-in-Chief of the Martian Army; the gorgeous captive Princess, Byspecialpermissionofthecopyrightowners, who was rescued from Evenyourbestfriendwonttellyou's hellish dungeon at the last minute by the muscle-bound Morningmouth with the aid of his sturdy space-flyer, Goodtothelastdrop.

He wrote of the furious air-combat between those gallant rocket-ships: *Itfloats*, *Itstoasted*, *Athletesfoot*, *Theysatisfy*, *Askthemanwhoownsone*, and last, but by no means least, *Notasoughtwasorloud*.

Glinkbottom was positive his story would be accepted. This was a masterpiece—no mistake about that!

He removed his head-squasher in triumph, too excited to realize that his head was very, very *longitudinal* due to the pressure to which it had been subjected. Aye, it extended a good four feet from brow to chin!

The eager man hurriedly grabbed his five-thousand-page chunk of literature and headed for the editorial offices of *Marvel Narrations*. He could not understand why passers-by stared at him so! Ah—he presently thought—they probably are aware of genius when they see it. Smaht pipple, these Noo Yawkers!

But—on Broadway, he was suddenly seized by a three-hundred-pound husky and bodily yanked into the east coast headquarters of the Twingling, Farnum, and Haley Circus.

And thus did our Glinkbottom fare. Instead of gaining fame through a *typewriter*, he gained fame through a *pen*—over which was spread a tent, on which was the word "Monstrosities" and in which sat the bearded lady, the rubber boy, and Thurlow Glinkbottom, *the man with the longitudinal head*.

THE END

"The Sacred Cut"

Editor, WONDER STORIES:

Re: "that absolutely rotten cut heading the table of contents."

Immediately after reading Paul J. Sykes's letter in the March issue, I dug out the good old Vol. 1, No. 1 of S.W.S. and discovered that the cut has been faithfully reproduced. Now if that cut has been used for years and no particular objection raised, why should it be removed now? I for one cast my vote in favor of it.

Now that that is over, here's a suggestion: how about an index for the year, so when a story is criticized or praised it can be located without having to wade through a mass of books?

Outside of that, everything is ROSYvelt.

J. LAWRENCE,
St. Louis, Mo.

P. S. I couldn't restrain this outburst in defense of the "Sacred Cut."

(We do not intend to do away with the "Sacred Cut," as you put it, and regret that we did not use it for a few months last year, for we consider it a good symbol of science-fiction.—EDITOR.)

Science Fiction Marching Ahead

Editor, WONDER STORIES:

I've found the February issue of WONDER STORIES a decided improvement. The new policy is certainly something to talk about. Starting at the beginning, I found "The Spore Doom" reminiscent of the good old days—truly a great narrative. Mr. Binder is becoming more eminent at every story.

The next on the list was "The Sublime Vigil." Great style, great plot, and a great story. That genus of story will doubtlessly be in great demand.

Abner J. Gelula scored another triumph in "The Vengeance of a Scientist"—an excellent story. I would like to see a great deal of his work in the future issues.

"An Episode on Io" manifests that Mr. Haggard's stories are to be awaited with unabated interest. I await with overwhelming curiosity his "Children of the Ray."

"The Shot from the Sky" was a corking story, though brief. At least one of that character of story should be in every issue. By the way, I might as well say now that I greatly enjoyed Benson Herbert's "The World Within" and "The World Without" which appeared in 1931 issues of WONDER STORIES. I'm rather late, but I got it over with.

I haven't read "The Exile of the Skies" because I like to read a story complete, and not get a fit waiting for the next instalment. From what a friend has told me, "The Exile of the Skies" is a tremendous story, ranking among the best ever printed in WONDER STORIES. I hope I am not disappointed. The cover of the February issue was a masterpiece.

Now a question: why did you discontinue the idea of printing under the name of the author a few names of some stories he has written?

Well, frankly speaking, WONDER STORIES is certainly seeing better times. Continue with the present policy and you'll find yourself out on top.

What about issuing some more Science-Fiction Classics? "Between Worlds" just whetted my enthusiasm. I'm looking forward in anticipation of the event when some more of that style literature, truly classics of science-fiction, will be published. I would like to see a large pile of them stacked high in my bookcase. Really, that story "Between Worlds" could stand a sequel; I wouldn't complain. (Take a hint, Mr. Smith.)

Now another suggestion. Why not go back on the air, Mr. Gernsback? I am sure that no science-fiction reader would miss the programs. Unfortunately, I have never heard any of your broadcasts, and therefore am exceedingly curious. I hope my wish will be granted; even fifteen minutes will satisfy me. In saying this I realize the expense involved, but with the better times coming, I'm sure you will be able to put it over.

Taking all the facts into consideration, I think the public is becoming aware of the fact that there's something mighty interesting in science-fiction plots. The five leading newspapers of Philadelphia all run science-fiction strips. Of course, they all are practically full of crazy adventure, but it shows that progress is being made. The scientific background is evident.

Such plots as discovering a city under the sea (shades of Atlantis!), a rocket ship stranded on another planet, the daily adventures of Alley Oop, a prehistoric man, and interplanetary adventure are used. The most successful of this latter plot is the adventures of Buck Rogers. Phil Nowlen has taken advantage of a great opportunity and has scored a triumph.

I can feel sure of saying that the banner of science-fiction is marching ahead!

RAYMOND PERL, MARIELLA,
Philadelphia, Pa.

(We put several of our very best stories into our February issue, as shown by the readers' opinions. We have several more excellent yarns by Eando Binder on hand. He is fast becoming one of the top-notchers. We like to give you plenty of short-short stories, but they are hard to secure, for it is much harder to write them than novelettes. The first Science-Fiction Classic, "Between Worlds," by Garrett Smith, was a reprint, being first published quite a number of years ago.—EDITOR.)

Another Graph

Editor, WONDER STORIES:

Surprise?—And how. Speaking of the story "Vengeance of a Scientist"—which is, to my way of thinking, superb, colossal, immense—a story that is really magnificent.

However, when one comes to the task of classing narratives as being "the best," or "good," or "the worst," he enters quite a bit of difficulty, particularly with WONDER STORIES. Up to the time when you returned to the small size, my favorites were, "Before the Asteroids," "A Subterranean Adventure," and "Electropolis." But a study of the last four issues shows definitely that nearly *every* story either equals or surpasses those stories that I thought were masterpieces. "The Exile of the Skies," I believe, tops them all. Perhaps I have judged wrong. Perhaps after a period of time I will change my views—but that seems indeed very remote.

The outlook for March is promising. Laurence Manning's narrations are always welcome. Looking forward to "Traders in Treasures," however and hope it's as crazy as was "When the Heavens Fell." And by the way—how's friend Eppy coming along with the "Interplanetary Congress"? Be sure and have said congress appropriate the required amount to give WONDER STORIES more pages and smooth edges—*and a cover by Lumen Winter.*

LEWIS F. TORRANCE,
Winfield, Kans.

(You will not find Eppy Snooks' "Traders in Treasures" as crazy as his "When the Heavens Fell," sorry to say—in fact, it is not crazy at all. He seems to have had a mental relapse and to have written something really sensible for once. Let's hope it happens again.

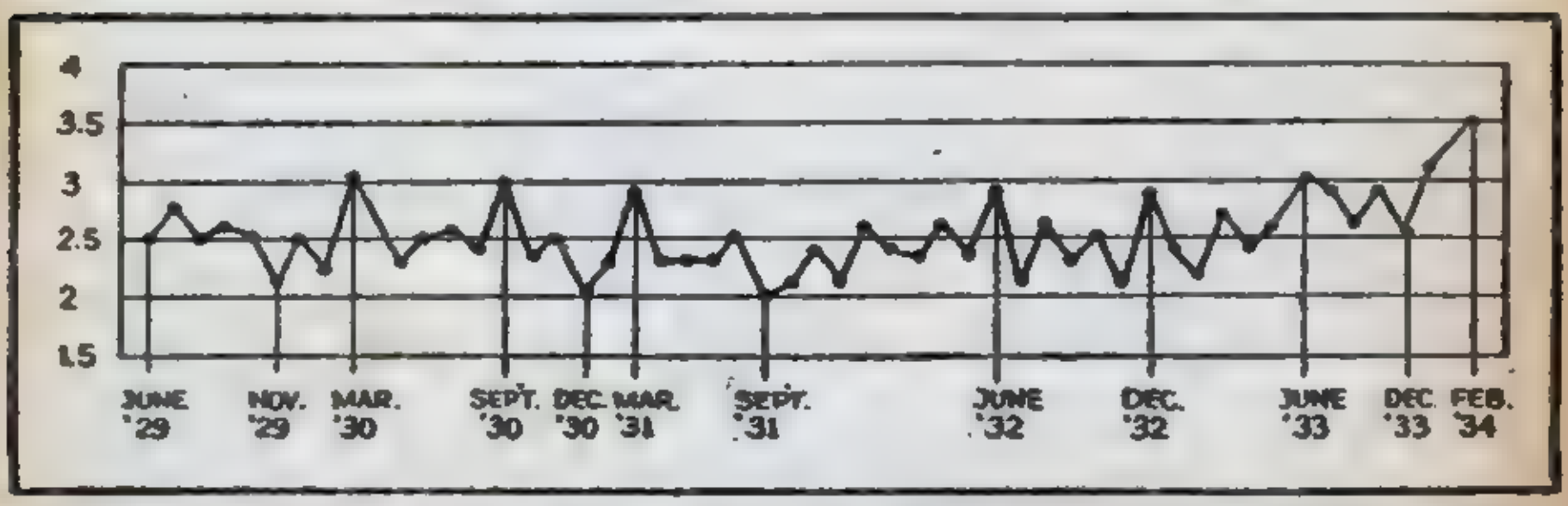
We are reproducing your graph herewith which we believe very interesting. You must have made an exhaustive survey of the volumes of WONDER STORIES to create it.—EDITOR.)

The Proposed Annual

Editor, WONDER STORIES:

The stories in each issue of WONDER STORIES keep on improving more and more. The February issue had a particularly good content.

(Continued on page 1179)



The above graph shows Mr. Torrence's rating of almost every issue of "Wonder Stories," right from the first issue to February, 1934. It is interesting to note that the last issue has reached a height greater than any one previous. Our new policy has worked wonders and accomplished much more than we dared hope for in such a short time. Only the highs and lows on this graph are indicated by dates. Ratings are from 2 (good) to 3.5 (almost excellent). We would like to see the continuation of this graph later on, and hope that Mr. Torrence will be forced to tread his lines steadily uphill.

The THIRD SEX! Man or Woman?

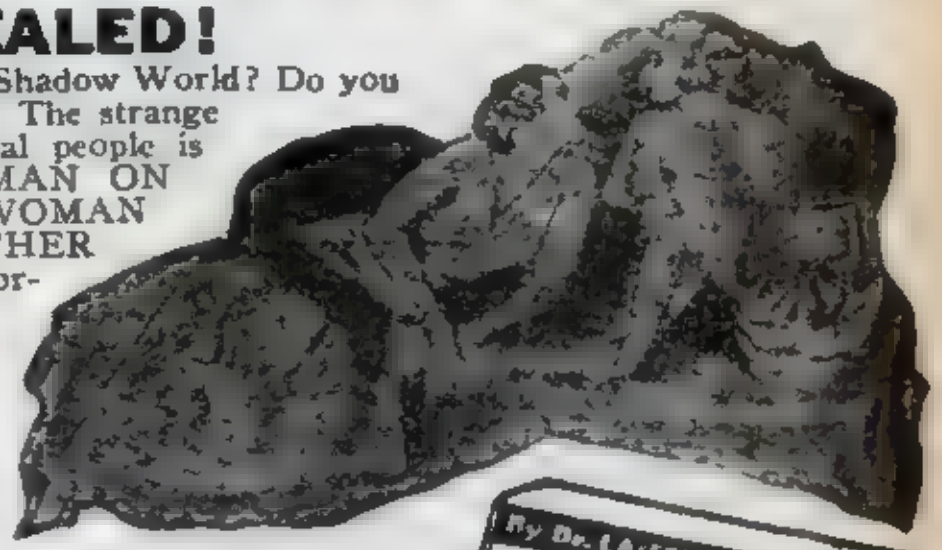
For hundreds of years men and women have talked with hushed voices about "STRANGE PEOPLE"—men who are not men—women who are not women. No one has ever *dared* to talk out in the open about it; Is it any wonder that the shocking, lurid facts of this great social evil are unknown to the great mass of men and women? Is it any wonder that strange nick-names are commonly used to describe these creatures.

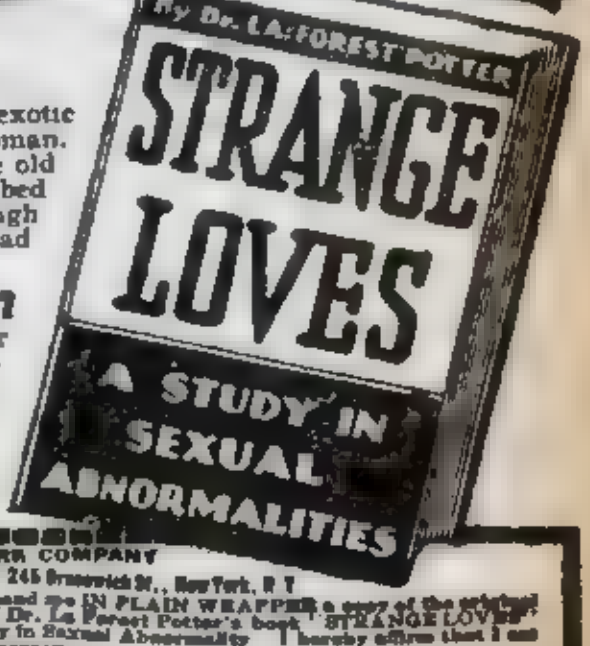
A DOCTOR CASTS THE LIGHT OF TRUTH ON THE STRANGE, EXOTIC WORLD OF TWILIGHT MEN AND WOMEN!

Now a Doctor has dared to tear away the veil of mystery. In blunt, understandable words he describes the unbelievable facts. "STRANGE LOVES," A Study in Sexual Abnormalities, by Dr. La Forest Potter, noted authority, is a document so weird, so startling, as to amaze the civilized world. Dr. La Forest Potter, the author, is a late member of the New York County Medical Society, Massachusetts Medical Society, Boston Gynecological Society, Associate Professor of Rhinology, Laryngology, and Otology, New York School of Clinical Medicine, and the author of many well known works.

THE TRUTH REVEALED!

Can you distinguish these men and women of the Shadow World? Do you know that their number is constantly increasing? The strange power these men and women wield over normal people is almost unbelievable. Dr. Potter says, "NO MAN ON EARTH HAS A CHANCE AGAINST A WOMAN ONCE SHE HAS SUCCUMBED TO ANOTHER WOMAN." Actual clinical cases reveal the abnormal ties and the unnatural desires and erotic reactions of these twilight men and women! There are records that actually prove that men have been MADE INTO ABNORMALS. A startling, provocative indictment against the false modesty that has been responsible for the growth of these fantastic, strange amatory curiosities among savage and civilized races.





STRANGE LOVE

Dr. Potter tells about the hidden, secret passions that dominate these women's exotic lives. He talks about the tragic duality of the effeminate man—half man—half woman. He delves deep into the ages—relates the bestialities and savageries practiced by the old Egyptians, Hindoos, Greeks, Assyrians and Romans—the sensuality that was ascribed even to the Greek Gods, to Zeus, Apollo, Hercules and Jupiter—the growth through history from ancient countries to France—to Germany—to its tremendous spread through the United States.

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Fearlessly, openly, the meaning of many misunderstood subjects is brought under the searchlight of truth. Sadism—Necrophilia—Phallic Worship—Sodomy—Pederasty—Tribadism—Saphism—Uranism—the normal man and woman will refuse to believe that such abnormalities exist and have been practiced through the ages.

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How many of the famous men of history were considered "odd"? Socrates, Plato, Caesar, Virgil, Oscar Wilde, Leonardo da Vinci, Lord Byron, Tchaikowsky, the musician, Walt Whitman, the gentle, lovable poet, Napoleon—men and women of all kinds in all stages of life

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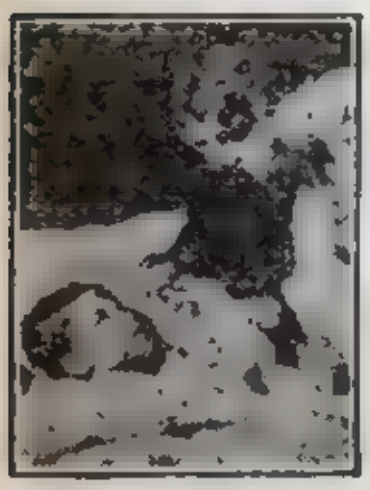

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SCIENCE QUESTIONS AND ANSWERS

(Continued from page 1174)

offending your tennis court. However, the best is undoubtedly vitriol.

Your question surely is scientific. We like to answer this type in particular, where the answers will be of some material benefit to the reader.—EDITOR.)

The Earth's Second Moon

Editor, SCIENCE QUESTIONS AND ANSWERS:

In the December issue of WONDER STORIES, your answer to a question was that over 2,000 asteroids have been catalogued. Perhaps you can tell me where I may obtain a list of all of these asteroids, with information about them.

I also want to ask a few other questions.

1. The earth was evidently thought to have a second moon, a body about 400 feet across which revolved about the earth in three hours at a distance of about 2,500 miles from the surface of the earth. Has any proof been given to this statement?

2. Also, in your December issue of W.S., you said that the "Trojans" were two groups of asteroids, recently discovered. How many asteroids are there in both of these groups?

LEON STORRM,
Chester, Pa.

(There is no particular book in English to which we could direct you that gives a complete list of the asteroids with their names. Almost any good astronomy will provide you with much information along this line. The first few hundred of the asteroids were named, particularly the larger ones, which naturally would be the first discovered; and the rest are merely numbered.

We have no proof that the earth ever had a second moon of the description you specify. However, it is interesting to conjecture that the Arizona crater might explain the reason why the hypothetical satellite no longer whirls around the earth.

There are six asteroids, three in each of the Trojan groups.—EDITOR.)

"Just Around the Corner"

Editor, SCIENCE QUESTIONS AND ANSWERS:

I have been casually hearing for the past six or seven years that television is "just around the corner." I have noticed magazines devoted to television on newsstands and have heard that there are a couple of television stations in the East. Yet I do not find television sets on sale in the radio stores or advertised in the newspapers. Could you tell me why this is?

WILLIS HAND,
Miami, Fla.

(The reason that you do not see television sets on the market is that it has not as yet "arrived." In other words, it is still in the experimental stage. The first crude television apparatus was constructed in 1922 and Baird demonstrated it in England in 1926. Images created in the receiving sets are not clear and it is difficult to synchronize the sound and pictures when the set is very far from the station. In the February issue of our sister publication, "Radio-Craft," Hugo Gernsback discussed the subject thoroughly in his editorial. He believes that we will not have true television until we can duplicate the functions of the human eye. The eye uses no scanning disc and has received perfect images for millions of years. We do not know when television will really be perfected—it may be a matter of weeks or years.—EDITOR.)

Revealing the Character by Handwriting

Editor, SCIENCE QUESTIONS AND ANSWERS:

Since it seems to me that the following questions, in which I am intensely interested, are within the bounds of science, I would like the editor to give an affirmative or negative answer to them and to back his answer with proof. The questions are: Do you think that handwriting reveals a person's character?

Do you think that a handwriting analysis reveals these characteristics?

By characteristics, I mean a person's ability to use his intelligence, his physical ability, his temperament. My dictionary defines character as: "The quality or qualities distinguishing any person; distinctive features, peculiarities." In other words, characteristics which make the difference between the president and a street-cleaner; white-collar worker and common laborer; doctor and lawyer; author and engineer.

STEVENS FOGARIS,
Passaic, N. J.

(We personally have very little faith in the ability of certain persons to read intimate things in the character of another merely by analyzing the handwriting. It is not a scientific profession, and little better than mind-reading and fortune-telling. We do not advise our readers to put much faith in the details given by these handwriting analyzers. Of course, you can usually tell, by the handwriting, the difference between the president and a street-cleaner, a white-collar worker and common laborer, simply because the president and the white-collar worker are educated men who write constantly until their handwriting becomes excellent, while the stations of the street-cleaner and common laborer do not require writing and they may very often neglect their penmanship so that it is quite illegible and undeveloped. This has nothing to do with the person's moral character, though; it merely shows that one is used to writing and the other is not. There is no reason to believe that there would be a great difference between that of a docter and a lawyer. If a person takes his time writing a letter, it looks quite different from the letter produced by someone in a great hurry. But an analysis that goes into detail pertaining to the person's character must be a great deal guesswork and broad deductions. There is no reason to believe that a man will make a good lawyer if he dots his "i's" with a line, or anything of that kind. It is not likely that you would become as famous as Shakespeare if you adopted his handwriting.—EDITOR.)

THE READER SPEAKS

(Continued from page 1178)

The second part of "The Exile of the Skies," by Richard Vaughan increases the interest started in the first part. I hope that you will rush the March issue so that the conclusion can be read as soon as possible.

Although one of the shortest stories in the issue, I am giving "The Sublime Vigil," by Chester D. Cuthbert second place. It's one of the best shorts published. How about a sequel? I expect to read this story a good many times.

Abner J. Geluta's "Vengeance of a Scientist," is a "different" sort of invisibility story, and held my interest throughout. More by this author, please.

Glad to see the return of J. Harvey Haggard so soon. Also glad that there will be more stories of "The Earth-Guard."

"The Spore Doom," by Eando Binder is another fine tale in the February issue. Perhaps we could get a sequel to this story also.

"The Shot From the Sky," increases my like for the short-short tale. Those WONDER STORIES has published have been excellent.

All of Paul's illustrations, and those by Winter illustrating "The Sublime Vigil," and "An Episode on Io," are well done. I wish you would have a greater variety of colors for the background of the cover. The present cycle of blue, yellow, and red is monotonous.

If you would send the magazine to subscribers flat, instead of rolled in half, it would arrive in better condition.

If it isn't possible to publish the Quarterly at the present time, how about an ANNUAL? In it you could have an out-of-print book-length reprint (foreign or from early *Argosies* and *Science and Inventions*) and short new and reprint stories. Published in large size, illustrated by Paul, containing 144 or 160 pages, and priced at fifty cents, it should be successful. Here are a few stories you might use: "The Moon Maiden," and "The Conquest of Mars," by Garrett P. Serviss: "Darkness and Dawn," by George Allen

(Continued on page 1180)

4 INCHES of MUSCLE
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MUSCLE BUILDER
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CLASSIFIED ADVERTISEMENTS

Advertisements in this section are inserted at the cost of ten cents per word for each insertion—name, initial and address each count as one word. Cash should accompany all classified advertisements unless placed by a recognized advertising agency. No less than ten words are accepted. Advertising for June, 1934, issue should be received not later than April 4.

SONGWRITERS

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Our June Issue Will Feature

"Into the Infinitesimal"

by Kaye Raymond

—an amazing novelette about adventure in the world of the atom.

THE READER SPEAKS

(Continued from page 1179)

[illegible]; and "On the Brink of 2000," by Garrett [illegible]

JACK DARROW.
Chicago, Ill.

(As we have mentioned before, we are contemplating the issuance of an ANNUAL. When the 1934 issue comes out, it will probably contain reprints from the very old issues of our own magazine—those stories that our veteran readers have raved over for five years, but our newer readers have missed. As our stock of these old issues has long been exhausted, this will give those who wish to read the old WONDER STORIES classics an opportunity to do so.—EDITOR.)

Old Issues for Sale

Editor, WONDER STORIES:

I have been a reader of WONDER STORIES for a long time, in fact, since the combination of *Air Wonder Stories* and *Science Wonder Stories*.

Congratulations on the new WONDER STORIES and the type of stories that are being printed.

Please print this letter as I would like to dispose of my set of WONDER STORIES from Vol. 2, No. 1 (the first one after the combination), to Vol. 5, No. 3 (October, 1933), with the exception of Volume 2, Numbers 3 and 4.

These magazines, which are in excellent condition, will be sold for an exceptionally low price.

EDWIN KESSLER,
1099 E. 97th St.
Cleveland, Ohio.

(Our stockroom supply of the old issues of WONDER STORIES has long been exhausted. Anyone desiring the issues mentioned in this letter may communicate with Mr. Kessler.—EDITOR.)

General Comment

Editor, WONDER STORIES:

Having a little time on hand, which to this lowly individual is quite an unusual occurrence, and after noticing the great number of comments, praises, and criticisms offered by your readers, permit me to add the inexpert opinions of a merely occasional reader of your magazine.

When I first started reading this magazine, I used to run across an exceptionally good story at times, one that made me forget the stories of lesser quality which made up the rest of the respective publication; and this—alas, but too rarely appearing—perfect story would cause me to run to the newsstand month after month, hoping to discover another one of the same quality.

But very often the general contents of the magazine appealed so little to my really not overly particular literary taste that many an innocent but dissatisfying copy found itself either tossed out of a train window to land beside the tracks only half read, or brutally hurled into a dilapidated but well-filled wastebasket.

However, those times seem to have definitely passed, and now every story that I manage to read is not being discarded until completely finished. In other words, the quality of your entire magazine has improved to such an extent that now almost every story equals that rare exception, which I so often hunted for in vain.

As for the illustrations, I daresay that they show almost as much improvement as do the stories. Paul's illustrations seem to grow better with every issue. I rate the cover on the new March issue done by him as a masterpiece, which in technical skill and simplicity has been equaled by him only once before in his cover illustration to Manning's "Call of the Mech-men." I must say, however, that his efforts at caricature result in effects that seem rather more terrifying than amusing. Winter's illustrations, although beautifully executed, show occasional technical flaws such as persons moving about in airless space with bare hands and clad in well-fitting but inappropriate aviators' suits instead of more plausible-appearing, if less natty, space-apparel; and other, more or less important oversights. But why not let

him try a cover illustration once in a while?

Your experiments in trying out different artists were interesting, but in some cases not very successful. I noticed another one, in the March issue, who made the illustration for Manning's "Caverns of Horror," and although I think that as far as the story is concerned, Manning has done better before, the illustration would make anybody want to read the corresponding story. The facial expressions of the characters as well as the monster confronting them are excellently done, although I think the picture itself is too dark and reveals too little detail.

I don't think that my humble opinion amounts to much, if anything, but, as my personal taste runs toward interplanetary tales, I wish you would keep on publishing such splendid stories as "The Exile of the Skies," which I just finished reading, and J. Harvey Haggard's "Evolution Satellite."

LEONARD BRINK,
Brooklyn, N. Y.

(There is not much we can say for this letter—it speaks for itself. We are pleased to note, however, that most of our readers seem to see the same improvement in WONDER STORIES that you do. Whether a magazine has improved or not, is not for the editor to say—the readers must decide that point.—EDITOR.)

A Revised Opinion

Editor, WONDER STORIES:

Having just finished the March issue of WONDER STORIES, I've decided to write and revise my dime-novelish opinion of your mag. Upon reading over *The Reader Speaks* in the March number, I remembered that one of the leading magazines of today is printed in that size, but I still don't like the small size. The March issue was admirable, and I can't find fault with any of the stories. "Caverns of Horror" was keen and it looks as though a sequel could be tacked onto it. "Xandulu" promises to be good and "The Exile of the Skies" ended up nicely. "Visitors From Mlok" was not the story I referred to—that was an extremely logical tale. Rather, the one I had in mind was "The Light From Beyond." However, on looking it over again, I decided that it was extremely well written. I read an article in the paper a few days ago telling of a man who discovered a ray which would make an object invisible. If you could find out more about it, I would be very grateful.

Winter is doing fine work; his figures are better than Paul's, although he is not quite up to Paul's standard in machinery and alien life.

JAMES POMERENKE,
Chicago, Ill.

(It is a peculiar fact that many of our readers who have derogatory opinions of WONDER STORIES soon revise them.

We believe that you will never see people walking around invisible—even though experimenters are working hard on the subject. Of course, if you could see them, they wouldn't be invisible!—EDITOR.)

Model Rockets

Editor, WONDER STORIES:

I have been a reader of WONDER STORIES for many years and I think it is the best magazine in its field. I would like to suggest that you publish plans for a model rocket ship powered by ordinary skyrockets or by a homemade one. I think that many readers would be interested in such.

TRUMAN TYLER,
Minneapolis, Minn.

(We cannot in this publication print plans for model rockets, but you will find this subject discussed every now and then in our sister publication, *Everyday Science and Mechanics*.—EDITOR.)

A Young Reader

Editor, WONDER STORIES:

Although I am fifteen years old and have been a reader of WONDER STORIES for quite a while, I have

(Continued on page 1183)

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No man or woman can escape the harmful effects of tobacco. Don't try to banish unaided the hold tobacco has upon you. Join the thousands of inveterate tobacco users that have found it easy to quit with the aid of the Keeley Treatment.

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See the editorial and page 1183

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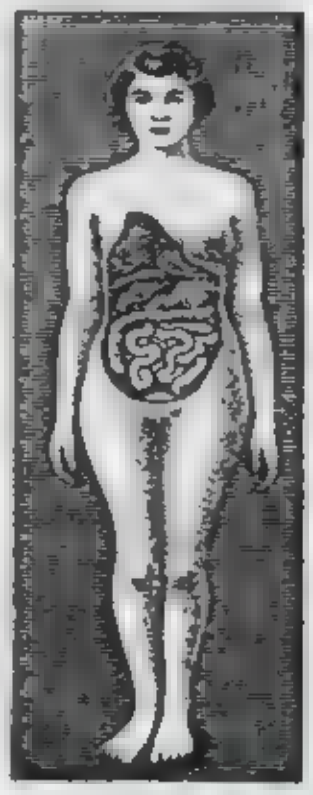
LIST OF PLATES

Plate I.	Nude Adult Female
" II.	Nude Adult Male
" III.	Nervous System of Female
" IV.	Skeletal System
" V.	Muscular System (Posterior)
" VI.	Muscular System (Anterior)
" VII.	Vascular System
" VIII.	Respiratory System
" IX.	Digestive System
" X.	Male Genital Organ in Detail
" XI.	Female Genital Organ in Detail
" XII.	Cross Section of Pregnant Female Body with Child.



All plates (one foot high) are printed in actual natural colors.

Thus far, plates such as these presented here have been so high in price as to be inaccessible to the public. Our plan in producing these charts is to make them available to every adult person.

The book is 14 inches high and 8½ inches wide, contains twelve full-page color plates and twelve text pages illustrated with fifty photographs and drawings, made from actual photographs, and all organs and parts of the human body—male and female—are shown in great detail in natural colors.

Opposite each page, an explanatory text is provided, illustrated with photographs and drawings to show in detail the different organs and other features of the human body. The book is recommended for nurses, art students, for lawyers for use in litigations, lecturers, physical culturists, hospitals, sanitariums, schools, colleges, gymnasiums, life insurance companies, employers' health departments, etc.

But every man and woman should own a copy of the ANATOMICAL MANUAL for effective knowledge of his or her own physical self!

It is of inestimable value to the prospective mother, because of the information it provides on the essential anatomical facts of pregnancy and the structure of the female genital organs.

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THE READER SPEAKS

(Continued from page 1181)

not written you before, for the simple reason that I am not a good writer. But since you have changed the size, I cannot keep quiet any longer. This letter pertains to the November, December, January, and February issues.

I believe that you now have the best size magazine of all, after you tried almost every size. The stories are a lot better and are still improving. I have listed below what I think are the ten leading stories in order of their merit, from the last four issues. I cannot comment on "The Exile of the Skies" as yet.

1. "The Lunar Consul"—Good for a science-fiction movie."
2. "Evolution Satellite"—Keep up with the "Space Patrol."
3. "Moon Plague"—Probably the real kind of life on the moon (if any).
4. "The Spore Doom"—Don't ever let Eando Binder get away.
5. "An Episode on Io"—We want a sequel.
6. "The Vengeance of a Scientist"—The most probable story of invisibility.
7. "The Call of the Mech-men"—More stories about the Stranger Club.
8. "The Mole-Men of Mercury"—A fine story!—More by Mr. Barnes.
9. "The Heat Destroyer"—A very good story of future wars.
10. "The Secret of the Microcosm"—Let's hear more from our German authors.

An honorable mention goes to Rice Ray for his humorous work in "Today's Yesterday."

Now what I think about the artists—in order of their merit:

Paul: He's the best by far for his drawings of machines and space-ships.

Winter: He's the best for his figure work.

Saaty: He seems very good in both figure and machine work.

Burian: Fair.

How about a little experimenting—if not too difficult? Let Paul and Winter draw a picture together. Paul could do all the work on machinery, space-ships, etc., and Winter could do all the figure work. In the January issue, the cover was done by Paul and taken from "Moon Plague" and the illustration before the story was by Winter. Don't you think that this was a mistake, as Paul gives you one impression of the moon-men and the characters and Winter gives you another?

By the way, where are the old authors, such as John W. Campbell, Jr., R. F. Starzl, Festus Pragnell, D. D. Sharp, Nathan Schachner, Harl Vincent, Otfrid von Hanstein, Captain S. P. Meek, Jack Williamson, Edmond Hamilton, and others? We haven't heard from them for a long time, especially Campbell. I'm glad to see that you *do not* have any more stories by Clark Ashton Smith. That's just fine!

The cover on the February issue was the best of the four covers. Don't ever take Paul away from the covers. Don't you think that the price mark on our magazine should come up in the right-hand corner and stay there, instead of roaming all over the cover? Since you changed to the smaller size, the edges of the cover seem to become frayed very easily after a little handling.

"Forthcoming Stories" is just the thing we've been waiting for. Let's have more short stories like "The Shot From the Sky" and keep those articles on science, astronomy, etc.

I think you have a fine magazine now and at the rate you are improving. I don't know how good it will be after a while.

JULIAN STAINBACK,
Drewry's Bluff, Va.

(Our young readers invariably study the magazine very thoroughly and sometimes give very helpful hints and constructive criticism.

We have stories on hand by several of the authors that you mention as "missing." We have just published Jack Williamson's "Xandulu," and are glad that you see an improvement in WONDER STORIES. —EDITOR.)

Good News for Members of the
SCIENCE FICTION LEAGUE

THE following list of essentials has been prepared for members of the SCIENCE FICTION LEAGUE by the officers at Headquarters.

A FEW WORDS AS TO THE PURPOSE OF THE LEAGUE

The SCIENCE FICTION LEAGUE was founded in February, 1934. The Executive Directors are as follows:

Forrest J. Ackerman, Fando Binder, Jack Darrow, Edmond Hamilton, David H. Keller, M.D., P. Schuyler Miller, Clark Ashton Smith, and R. F. Starzl. Hugo Gernsback, Executive Secretary, Charles D. Hornig, Assistant Secretary.

The SCIENCE FICTION LEAGUE is a membership organization for the promotion of science fiction. There are no dues, no fees, no initiations, in connection with the LEAGUE. No one makes any money from it; no one derives any salary. The only income which the LEAGUE has is from its membership essentials. A pamphlet setting forth the LEAGUE'S numerous aspirations and purposes will be sent to anyone on receipt of a 3c stamp to cover postage.

One of the purposes of the SCIENCE FICTION LEAGUE is to enhance the popularity of science fiction, to increase the number of its loyal followers by converting potential advocates to the cause. To this end, the SCIENCE FICTION LEAGUE supplies members with membership letterheads, envelopes, lapel buttons, and other essentials. As soon as you are enrolled as a member, a beautiful certificate with the LEAGUE'S seal will be sent to you, providing 15c in stamps or coin is sent for mailing and handling charges. However, this will be given free to all those enrolled members who find it possible to call personally at Headquarters for it.

Another consideration which greatly benefits members is that they are entitled to preferential discounts when buying science fiction books from numerous firms who have agreed to allow lower prices to all SCIENCE FICTION LEAGUE members. The book publishers realize that, the more fervid fans there are to boost science fiction, the more business will result therefrom; and a goodly portion of the publishing business is willing, for this reason, to assist SCIENCE FICTION LEAGUE members in increasing their science fiction collections by securing the latest books of this type at discounted prices.

SCIENCE FICTION ESSENTIALS LISTED HERE SOLD ONLY TO SCIENCE FICTION LEAGUE MEMBERS

All the essentials listed on this page are never sold to outsiders. They cannot be bought by anyone unless he has already enrolled as one of the members of the SCIENCE FICTION LEAGUE or signs the blank on this page (which automatically enrolls him as a member, always provided that he is a science fiction enthusiast).

If, therefore, you order any of the science fiction essentials without filling out the blank, or a facsimile (unless you are already enrolled as a LEAGUE member), your money will be returned to you.

Inasmuch as the LEAGUE is international, it makes no difference whether you are a citizen of the United States or any other country. The LEAGUE is open to all.

LEAGUE LETTERHEADS

A beautiful letterhead has been especially designed for members' correspondence. It is the official letterhead for all members of the LEAGUE and is invaluable when it becomes necessary to correspond with other members or with Headquarters.

A—SCIENCE FICTION LEAGUE letterheads, per 100.....Prepaid 50c

LEAGUE ENVELOPES

So that letters mailed to members of the LEAGUE can be immediately recognized, special envelopes that harmonize with the letterheads have been printed.

B—SCIENCE FICTION LEAGUE envelopes, per 100.....Prepaid 50c

LEAGUE SEALS

These seals, or stickers, are printed in three colors and measure 1¼" in diameter, and are gummed on one side. They are used by members to affix to stationery, letterheads, envelopes, postal cards and the like. The seals signify that you are a member of the SCIENCE FICTION LEAGUE. Sold in lots of 25's or multiples thereof.

C—SCIENCE FICTION LEAGUE seals, per 25.....Prepaid 15c

LEAGUE LAPEL BUTTON

This beautiful button is made in hard enamel in four colors—red, white, blue and gold. It measures ¾" in diameter. By wearing this button, other members will recognise you. Many friends will perhaps also want to join the LEAGUE. The button must be seen to be appreciated.

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A—50c per 100

B—50c per 100

C—15c for 25

D—35c each

PLEASE NOTE THAT THE ABOVE ACCESSORIES ARE SOLD ONLY TO MEMBERS OF THE SCIENCE FICTION LEAGUE AND NOT TO NON-MEMBERS. Send all orders for accessories to SCIENCE FICTION LEAGUE, 96-98 Park Place, New York, N. Y.

If you do not wish to mutilate this magazine, you may copy either or both coupons on a sheet of paper; then send it to the offices of the LEAGUE.

CLIP— MAIL COUPON BELOW!

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96-98 Park Place, New York, N. Y.

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I, the undersigned, herewith desire to apply for membership in the SCIENCE FICTION LEAGUE. In joining the LEAGUE, I understand that I am not assessed for membership and that there are no dues and no fees of any kind. I pledge myself to abide by all the rules and regulations of the SCIENCE FICTION LEAGUE, which rules you are to send me on receipt of this application.

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WONDER STORIES *are everywhere*— If you know where to find them!

BELIEVE It Or Not, real wonder stories are going on day and night, and right now, more wonder stories are happening all around you than you will find in the pages of this magazine.

While you are reading this, music, speech, talk, which originated perhaps 12,000 miles away from where you are, is vibrating in your body, only you don't know it.

But the short wave fraternity all over the world knows this, and for a few paltry dollars they rig up in their own homes a short wave set which brings in stations from the Antipodes. Such sets cost as low as $7.20, believe it or not. So if you are looking for real wonder stories, they are in the making right along.

How can you listen to Sydney, Australia; to Berlin, to Moscow, London, day in and day out, at practically no cost at all? Just get the catalog, which is a veritable encyclopedia of facts, described below, and you will be writing your own wonder stories.

Here are a few samples of actual wonder stories told by actual listeners:

HOW IT WORKS!

I have constructed the OSCILLODYNE RECEIVER and boy! how it works!

The first day without any trouble I received Spain, England, France, and other foreign countries. Amateurs! why I never knew there were that many until now. With the one tube Oscillodyne, I bring in more stations on one plug-in coil than with a set of coils on different short wave sets.

IF ANY ONE IS TRYING HIS LUCK ON SHORT WAVE SETS, IT WILL BE WORTH WHILE TO CONSTRUCT THE ONE TUBE OSCILLODYNE.

PAUL KORNEKE, JR. N. S.
Pittsburgh, Pa.

FOREIGN STATIONS GALORE

It may interest you to know that yesterday, on my Doerle short wave set at 13:45. P.S.T., I heard GFH at Rio de Janeiro. They came in at 10230 Kcs. and the announcing voice was as clear and strong as on an ordinary telephone.

I am using just 45 volts for both detector and audio stage on the plate. What it would do on 90 volts on the audio I do not venture to say.

At the moment 18.35 P.S.T. I am listening to phone from Japan to Hawaii. No station identification however. Around 16,000 K.C.S. KKD—Kauhuku Hawaii just identified his station.

HARRY V. DAVIS.
Penticton, B.C., Canada.

THE WHOLE WORLD

In the past two days I brought in with my Oscillodyne S-W dial the following foreign stations: 12RO, DJC (this with such volume that I was able to plug in the loudspeaker) and a French station which I was unable to identify, but I believe it to be FYA Pontoise, and also another German station which I have not been able to identify as yet.

On Wednesday RAQ was weak and noisy and DJC was loud and clear, but on Thursday the conditions were reversed. I have received many United States stations, such as WSUAA, WSKP, WSUK, WSXE, etc., etc.

In Short Wave Craft, this set was called A WONDER SET, and I certainly agree.

C. W. KNIERIM.
Hollis, L. I., New York.

Remember, you do not have to be a technician to receive stations from all over the world these days. We have solved all the technical trouble for you. Anyone can do it, and the cost is amazingly low.

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If you have received copies of our previous editions, you are familiar with the type of book we publish—but this new edition WHAT A BOOK!

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Sexual Starvation
Glands and Sex Instinct
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The Truth About Abuse

WHAT EVERY WOMAN SHOULD KNOW

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Sexual Slavery of Women
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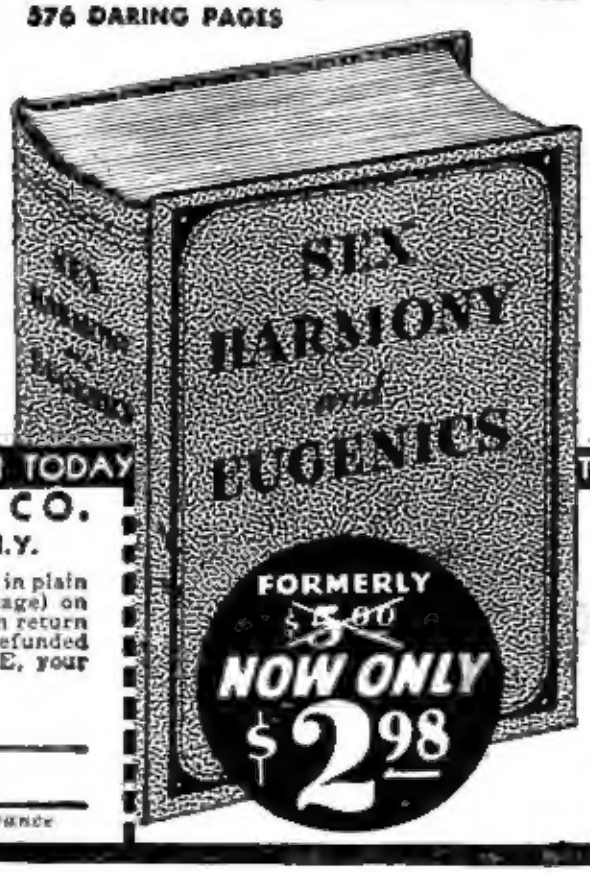

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"I now know greater peace of mind, more assurance, greater faith in myself. Through the wisdom and enlightenment of the Lessons, I am envisioning a vista, never before experienced, of security and a sense of power." F. A. C., Los Angeles.

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